

**Index to the Rulemaking Record
Effluent Limitations Guidelines and Standards
for Synthetic-Based Drilling Fluids and
other Non-Aqueous Drilling Fluids in the
Oil and Gas Extraction Point Source Category
(40 CFR 435)**

Docket Number W-98-26

U.S. Environmental Protection Agency
Office of Water/Office of Science and Technology
Engineering and Analysis Division (4303)
1200 Pennsylvania Ave., NW
Washington, DC 20460

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A. Regulatory Background Information

(a) General

No.	Document Title	Volume	No. of Pages
1	U.S. EPA. 1993. Development Document For Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category. EPA 821-R-93-003.	1	391
2	U.S. Environmental Protection Agency, Development Document for Final Effluent Limitations Guidelines and Standards for the Coastal Subcategory of the Oil and Gas Extraction Point Source Category, EPA 821-R-96-023, October 1996.	1	630

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A. Regulatory Background Information

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No.	Document Title	Volume	No. of Pages
1	Alaska Administrative Code (AAC) Title 18. Environmental Conservation, Chapter 70 - Water Quality Standards and Chapter 80 - Drinking Water.	1	58
2	Alaska Department of Fish and Game. 1998. Fax transmission from M. Beverage; AK Rule 2-S-H-11-96 and 5 AAC 31.390. December 10, 1998.	1	10

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B. Public Participation

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No.	Document Title	Volume	No. of Pages
1	Daly, Joseph, U.S. EPA, Memorandum regarding "May 8-9, 1997, Meeting in Houston, Texas-Inception of Industry/Stakeholder Work Groups to Address Issues of Discharges Associated with Synthetic-Based Drilling Fluids (SBF)," January 14, 1999.	1	52
2	Daly, Joseph, U.S. EPA, Memorandum regarding "Meeting with Oil and Gas Industry Representatives Regarding Synthetic Drilling Fluids," July 2, 1996, with two attachments: 1) Information package entitled "Enhanced Mineral Oils (EMO) for Drilling," presented by Exxon Co., U.S.A Marketing, Donald F. Jacques, Ph. D., June 25, 1996, and 2) Letter from Michael E. Parker, P.E., Exxon Company U.S.A., to M. B. Rubin, U.S. EPA, September 17, 1996.	1	13

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No.	Document Title	Volume	No. of Pages
1	Daly, Joseph, U.S. EPA, Memorandum regarding "Phone Conversation Regarding Number of Wells Drilled in Cook Inlet, Alaska," October 23, 1998.	1	1
2	Daly, Joseph, U.S. EPA, Memorandum regarding "Phone Conversations Regarding Number of Wells Likely to Switch from Using OBF to SBF Post SBF Effluent Guidelines," October 28, 1998.	1	1
3	Daly, Joseph, U.S. EPA, Memorandum regarding "October 13 1998 Teleconference Regarding SBF Use," October 20, 1998.	1	2
4	Baker, Ron, "A Primer of Offshore Operations," Second Edition, Petroleum Extension Service, University of Texas at Austin, 1985.	Public Document	

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(b) Discharge Monitoring Methods and Limitations

No.	Document Title	Volume	No. of Pages
1	American Society of Testing and Materials (ASTM). 1992. Standard Guide for Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods. ASTM 1367-92.	1	26
2	Addy, J.M., J.P. Hartley and P.J.C. Tibbetts. 1984. Ecological effects of low toxicity oil-based mud drilling in the Beatrice Oilfield. <i>Marine Pollution Bulletin</i> , Vol. 15, No. 12. pp. 429-436.	1	8
3	API. 1995. Reducing Uncertainty in Laboratory Sediment Toxicity Tests. API Publication 4632. Health and Environmental Sciences Department. September 1995.	1	143
4	Berge, J.A. 1996. The effect of treated drill cuttings on benthic recruitment and community structure: main results of an experimental study on a natural seabed <u>In</u> : The Physical and Biological Effects of Processed Oily Drill Cuttings. E&P Forum Report No. 2.61/202. April 1996. pp. 41-63.	1	23
5	Boothe, P.N. and B.J. Presley. 1989. Trends in sediment trace concentrations around six petroleum drilling platforms in the northwest Gulf of Mexico. <u>In</u> : F.R. Englehardt, J.P. Ray and A.H. Gillam (Eds.) <i>Drilling Wastes</i> . Elsevier Applied Science, London. pp. 3-22.	1	12
6	Bothner, M.H. et al. 1985. The Georges Bank Monitoring Program 1985: Analysis of Trace Metals. U.S. Geological Survey Circular 988.	1	63
7	Boyd, P.A., D.L. Whitfill, T.S. Carter and J.P. Allamon. 1985. New Base Oil Used in Low-Toxicity Oil Muds. <i>J. Petroleum Technology</i> , January 1985, pp. 137-142	1	7
8	Brandsma, M.G. 1996. Computer simulations of oil-based mud cuttings discharges in the North Sea. <u>In</u> : The Physical and Biological Effects of Processed Oily Drill Cuttings. E&P Forum Report No. 2.61/202. April 1996. pp. 25-40.	1	17
9	BP Exploration Operating Company Ltd. 1996. BP Single well 15/20b-12 (Donan) synthetic mud (Petrofree) second post-drilling environmental survey. Environment & Technology Ltd. ERT Draft Report No. 96/062/3 June 1996.	1	177

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No.	Document Title	Volume	No. of Pages
10	Candler, J., R. Herbert and A.J.J. Leuterma. 1997. Effectiveness of a 10-day ASTM Amphipod Sediment Test to Screen Drilling Mud Base Fluids for Benthic Toxicity. SPE 37890 Society of Petroleum Engineers Inc. March 1997. 19 pp.	2	20
11	Churan, M., J.E. Candler and M. Freeman. Onsite and Offsite Monitoring of Synthetic-Based Drilling Fluids for Oil Contamination. SPE 37906 Society of Petroleum Engineers Inc. March 1997. 14 pp.	2	14
12	Hood., C.A. 1997. Letter to J. Daly, USEPA with unpublished sediment toxicity data from Baker Hughes, INTEQ. July 9, 1997.	2	14
13	Ooi, B-H. 1994. Marine Environmental Monitoring Program. SPE 27166 Society of Petroleum Engineers, Inc. January 1994.	2	10
14	Rabke S. et al. 1998. Interlaboratory Comparison of a 96-hour <i>Mysidopsis bahia</i> Bioassay Using a Water Insoluble Synthetic-Based Drilling Fluid. Presented at 19th Annual Meeting of Society of Environmental Toxicology and Chemistry, Charlotte NC, November 15-19, 1998.	2	3
15	Rabke S. and J. Candler. 1998. Development of Acute Benthic Toxicity Testing for Monitoring Synthetic-Based Muds Discharged Offshore. Presented at IBC Conference on Minimizing the Environmental Effects of Offshore Drilling, Houston Texas, February 9, 1998.	2	26
16	Slater, M., M.H. Hille and Å. Molversmyr. 1995. Commonly Used Biodegradation Techniques for Drilling Fluid Chemicals, Are They Popular? SPE/IADC 29376, pp. 387-397.	2	9
17	Weintritt, D. and R. Benjamin, "Evaluation of Static Sheen Test for Water-Based Muds, Synthetic-Based Muds, and Enhanced Mineral Oils (Draft)," August 1998, with cover letter from Robert J. Moran, National Ocean Industries Association, to Joseph M. Daly, U.S. EPA, September 28, 1998.	2	182
18	Daly, Joseph, U.S. EPA, E-mail letter to Roger Claff, API, regarding "Comments on Static Sheen Report," October 15, 1998.	2	1

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No.	Document Title	Volume	No. of Pages
19	Annis, Max R., "Procedures for Sampling and Testing Cuttings Discharged While Drilling With Synthetic-Based Muds," prepared for the American Petroleum Institute (API) <i>ad hoc</i> Retention on Cuttings Work Group under the API Production Effluent Guidelines Task Force, August 19, 1998.	2	16
20	U.S. Environmental Protection Agency. Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods. Office of Research and Development. EPA/600/R-94/025. June 1994.	2	154
21	U.S. Department of Health, Education, and Welfare. Carcinogens - Working With Carcinogens. NIOSH-77-206. August 1977.	2	53
22	U.S. Environmental Protection Agency. Methods for the Determination of Diesel, Mineral, and Crude Oils in Offshore Oil and Gas Industry Discharges. Office of Water. Engineering and Analysis Division. EPA 821-R-92-008. December 1992.	2	75
23	U.S. Environmental Protection Agency. Handbook for Analytical Quality Control in Water and Wastewater Laboratories. Environmental Monitoring and Support Laboratory. EPA-600/4-79-019. March 1979.	2	157
24	Montgomery, R., Pechan-Avanti Group. Memorandum to Joseph Daly, USEPA, regarding Draft API Sediment Toxicity Protocol for Use With Synthetic-Based Drilling Fluids (with attachments). December 11, 1998.	2	112
25	Daniels, C.B. 1998. Synthetic-Based Drilling Fluids: An Assessment of the Spatial Distribution of Toxicants in Sediments from Gulf of Mexico Drilling Platforms. A Report Prepared for the Office of Water. EPA/600/R-98/104.	2	11
26	American Petroleum Institute, Information package regarding "Data Tables for the Conference Call for Review of 2 nd Round of Range-Finders," API Drilling Mud Issue Work Group <i>ad hoc</i> SBM Sediment Toxicity Protocol Development Work Group, September 11, 1998.	2	10
27	American Petroleum Institute, Information package regarding "Conference Call for Review of 3 rd Round of Range-Finders," API Drilling Mud Issue Work Group <i>ad hoc</i> SBM Sediment Toxicity Protocol Development Work Group, December 11, 1998.	2	7

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29	Uhler, A.D., J.A. Seavey, and G.S. Durell, Battelle, "Laboratory Evaluation of Static Sheen Replacements: RPE Method (Final Draft Report)," plus addendum, November 16, 1998, with cover letter from Robert Moran, National Ocean Industries Association, to Joseph Daly, U.S. EPA, November 16, 1998.	2	53
30	Uhler, A.D., J.A. Seavey, and G.S. Durell, Battelle, "Laboratory Evaluation of Static Sheen Replacements: GC/MS Method (Draft Report)," November 16, 1998, with cover letter from Robert Moran, National Ocean Industries Association, to Joseph Daly, U.S. EPA, November 19, 1998.	2	51
31	Ditsworth, G.R., D.W. Schults, and J.K.P. Jones. 1990. Preparation of Benthic Substrates for Sediment Toxicity Testing. <i>Environmental Toxicology and Chemistry</i> . Vol. 9, pp.1523-1529.	2	7
32	Suedel, B.C., J.H. Rodgers, and P.A. Clifford. 1993. Bioavailability of Fluoranthene in Freshwater Sediment Toxicity Tests. <i>Environmental Toxicology and Chemistry</i> . Vol. 12, pp. 155-165.	2	11
33	American Society of Testing and Materials (ASTM). 1994. Standard Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing. ASTM E 1391-94 .	2	21

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No.	Document Title	Volume	No. of Pages
1	American Petroleum Institute (API). 1998. Responses to Technical Questions for Oil and Gas Exploration and Production Industry Representatives. E-mail from M. Parker, Exxon to J. Daly, U.S. EPA/OW with attached file, August 7, 1998.	2	16
2	Avanti Corporation, "Assessment and Comparison of Available Drilling Waste Data from Wells Drilled Using Water Based Fluids and Synthetic Based Fluids," prepared for the U.S. Environmental Protection Agency, contract 68-C5-0035, September 30, 1997.	2	22
3	Annis, Max R., "Retention of Synthetic-Based Drilling Material on Cuttings Discharged to the Gulf Of Mexico," prepared for the American Petroleum Institute (API) <i>ad hoc</i> Retention on Cuttings Work Group under the API Production Effluent Guidelines Task Force, August 29, 1997.	2	49
4	Daly, Joseph, U.S. EPA, letter to Larry Henry, Chevron USA Production Co., regarding "Technical Questions for Oil and Gas Exploration and Production Industry Representatives," with attachment, April 1, 1998.	2	8
5	The Pechan-Avanti Group, Worksheet regarding "Calculation of Organics in Waste Cuttings Due to Crude Contamination," January 20, 1999.	2	1
6	SAIC, Worksheet entitled "Calculations for Average Density of Dry Solids in Cook Inlet Drilling Mud," June 6, 1994.	2	1
7	The Pechan-Avanti Group, Worksheet regarding "Calculation of Model Well SBF Drilling Fluid Formulation," October 26, 1998.	2	28
8	Baker-Hughes Inteq, Product information sheet featuring "Typical Formulation, 14.0 lb/gal / 70/30 SWR," 1995.	2	1
9	Friedheim, J. E., and H.L. Conn, "Second Generation Synthetic Fluids in the North Sea: Are They Better?" IADC/SPE 35061, 1996.	2	14
10	Baker-Hughes Inteq, Product Bulletin for "ISO-TEQ™," 1994.	2	1
11	Baker-Hughes Inteq, Material safety Data Sheet for "MIL-BAR" (Barite), March 21, 1994.	2	2
12	Baker-Hughes Inteq, Case history information featuring synthetic-based drilling fluid properties, 1995.	2	3

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No.	Document Title	Volume	No. of Pages
13	Daly, Joseph, U.S. EPA, Memorandum regarding "Contamination of Synthetic-Based Drilling Fluid (SBF) with Crude Oil," January 14, 1999.	2	1
14	The Pechan-Avanti Group, Worksheet regarding "Number of Days to Drill Model SBF Wells," October 27, 1998.	2	3
15	Daly, Joseph, U.S. EPA, Memorandum regarding, "Market Share of Respondents to Technical Questions," August 17, 1998.	2	1

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(d) Drilling Waste Management and Control Technologies

No.	Document Title	Volume	No. of Pages
1	Veil, John A., Argonne National Laboratory, Washington, D.C., "Data Summary of Offshore Drilling Waste Disposal Practices," prepared for the U.S. Environmental Protection Agency, Engineering and Analysis Division, and the U.S. Department of Energy, Office of Fossil Energy, November 1998.	2	34
2	The Pechan-Avanti Group, "Trip Report: Demonstration of the 'Mud 10' Drilling Fluid Recovery Device at the Amoco Marlin Deepwater Drill Site," August 7, 1998.	2	21
3	Daly, Joseph, U.S. EPA, Memorandum regarding "Data Showing the Performance of the Mud 10 with North Sea Oil Wells," January 14, 1999.	2	55
4	Martin, Neil, Enaco PLC, letter to Joseph Daly, U.S. EPA, regarding the MUD 10 Fluid Recovery Unit, with attached literature and data, July 22, 1997.	2	33
5	Brandt/EPI, "The Handbook on Solids Control and Waste Management," 4 th edition, 1996.	2	134
6	McIntyre, Jamie, Avanti Corporation, Memorandum to Joseph Daly, U.S. EPA, regarding "Summary of December 2 Meeting with David Wood of Mud Recovery Systems," December 18, 1997.	2	4
7	Daly, Joseph, U.S. EPA, Memorandum regarding "Cost of Synthetic-Based Drilling Fluids (SBF)," January 15, 1999.	2	1
8	M-I Drilling Fluids, Bar graph entitled "M-I's Synthetics Marketplace," with notation it was handed to J. Daly by J. Candler on January 30, 1997.	2	1
9	McIntyre, Jamie, Avanti Corporation, Telephone Communication Report on conversation with Peter Matthews, Newpark Drilling Fluids, regarding "'Centrifugal Dryer' for Drill Cuttings," May 29, 1998.	2	1
10	Derrick Equipment Company, Product brochure entitled "Derrick HI-G™ Dryer with Optional Hydrocyclone Packages," October 1997.	2	6
11	McIntyre, J., Avanti Corporation, Telephone Communication Report on conversation with Mike Montgomery, Brandt Company, regarding "Questions regarding Brandt solids control equipment," with attached product bulletins, April 13, 1998.	2	32

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12	McIntyre, J., Avanti Corporation, Telephone Communication Report on conversation with George Potts, Derrick Equipment Company, regarding "Questions regarding Derrick solids control equipment," with attached price information, April 24, 1998.	2	5
13	McIntyre, J., Avanti Corporation, Telephone Communication Report on conversations with Paul Hanson (on April 20, 1998), and George Murphy (on April 24, 1998) of SWACO, regarding "Questions regarding SWACO solids control equipment," with attached product brochures.	2	7
14	McIntyre, J., Avanti Corporation, Telephone Communication Report on conversation with Bryan Murry, Broadbent, Inc., regarding "Questions regarding Broadbent solids control equipment," with attached product brochure, April 15, 1998.	2	25
15	Mud Recovery Systems, Ltd., Product brochure entitled "M.U.D. 10 and M.U.D. 6 Mud Recovery and Cuttings Cleaning System," undated.	2	7
16	Walters, Herb, "Dewatering of Drilling Fluids," in <u>Petroleum Engineer International</u> , February 1991.	3	4
17	Carriere, J. and E. Lee, Walk, Haydel and Associates, Inc., "Water-Based Drilling Fluids and Cuttings Disposal Study Update," Offshore Effluent Guidelines Comments Research Fund Administered by Liskow and Lewis, January 1989.	3	113
18	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with personnel at Frances Torque Service, regarding "Cuttings box rental costs (Gulf of Mexico area)," June 4, 1998.	3	1
19	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with John Belsome, Seabulk Offshore Ltd., regarding "Offshore supply boat costs and specifications," June 3, 1998.	3	1
20	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with George Bano, Sea Mar Management, regarding "Offshore supply boat costs and specifications," June 3, 1998.	3	1
21	U.S. EPA, "Trip Report to Campbell Wells Land Treatment, Bourg, Louisiana, March 12, 1992," May 29, 1992.	3	36
22	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with Frank Lyon, Newpark Environmental, regarding "Drilling Waste Zero Discharge Disposal Costs," May 19, 1998.	3	2

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No.	Document Title	Volume	No. of Pages
23	McIntyre, Jamie, The Pechan-Avanti Group, Telecommunications Report on conversation with Darron Stankey, McKittrick Solid Waste Disposal Facility, regarding "California Prices for Land Disposal of Drilling Wastes," October 16, 1998.	3	1
24	McIntyre, Jamie, SAIC, Telecon on conversation with Josh Stenson, Carlisle Trucking, regarding "Costs to Truck Wastes from Kenai, Alaska to Arlington, Oregon," May 23, 1995.	3	1
25	Montgomery, Richard, The Pechan-Avanti Group, Telecommunication Report on conversation with Shane Morgan, Ecology Control Incorporated, regarding "costs associated with land and water transport of drill cuttings and drilling fluids for offshore oil platforms operating off the California coast," May 9, 1998.	3	4
26	Weideman, Allison, U.S. EPA, "Trip Report to Alaska Cook Inlet and North Slope Oil and Gas Facilities, August 25-29, 1993," August 31, 1994.	3	72
27	Newpark Environmental Services, Facsimile of Price List, Effective May 1, 1998, from Lisa L. Denman to Kerri Kennedy, May 26, 1998.	3	5
28	U.S. Liquids of Louisiana, Facsimile of Price List, from "Betty" to Jamie McIntyre, May 26, 1998.	3	8
29	McIntyre, Jamie, SAIC, Telecon on conversation with Alan Katel, Chemical Waste Management of the Northeast, regarding "Cost of Disposing Drilling Wastes and Possible Transportation Routes," May 9, 1995.	3	1
30	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with Todd Franklin, Apollo Services, regarding "Apollo Services drilling waste zero discharge practices and cost," May 19, 1998.	3	3
31	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with Nubon Guidry, National Injection Services, regarding "Zero discharge practices for OBM and SBM," April 29, 1998.	3	18
32	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with Gene Kraemer, National Injection Services, regarding "Zero discharge costs and space requirements: Onsite injection," May 19, 1998.	3	2

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No.	Document Title	Volume	No. of Pages
33	Montgomery, Richard, The Pechan-Avanti Group, Telecommunication report on conversation with David Daniel, Environmental Enterprises, regarding "Cost Associated with Drilling Fluid Regulatory Options," October 15, 1998.	3	1
34	Science Applications International Corporation, "Final: Offshore Oil and Gas Industry: Analysis of the Cost and Pollutant Removal Estimates for the BCT, BAT, and NSPS Options for the Drill Cuttings and Drilling Fluid Streams," submitted to the U.S. Environmental Protection Agency, Engineering and Analysis Division, January 13, 1993.	3	89
35	Engineering News Record, "Construction Cost Index History (1908-1997)," website address http://www.enr.com/cost/costcci.htm , June 8, 1998.	3	4
36	McIntyre, Jamie, The Pechan-Avanti Group, Telecommunication Report on conversation with John Candler, M-I Drilling Fluids, regarding "Cost Estimates for Proposed RPE Method," October 16, 1998.	3	1
37	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with Mike Singler, National Injection Services, regarding "NIS Drilling Waste Zero Discharge Technology and Costs," May 11, 1998.	3	1
38	The Pechan-Avanti Group, Worksheet regarding "Calculation of Daily Onsite Injection Cost, October 30, 1998.	3	1
39	The Pechan-Avanti Group, "BAT Compliance Cost Analysis: '0% OBF Wells Convert' Scenario," prepared for Joseph Daly, U.S. EPA, Office of Water, Engineering and Analysis Division, January 21, 1999.	3	11
40	The Pechan-Avanti Group, "BAT Compliance Cost Analysis: '100% OBF Wells Convert' Scenario," prepared for Joseph Daly, U.S. EPA, Office of Water, Engineering and Analysis Division, January 21, 1999.	3	11
41	The Pechan-Avanti Group, "BAT Pollutant Reductions Analysis: '0% OBF Wells Convert' Scenario," prepared for Joseph Daly, U.S. EPA, Office of Water, Engineering and Analysis Division, January 20, 1999.	3	5
42	The Pechan-Avanti Group, "BAT Pollutant Reductions Analysis: '100% OBF Wells Convert' Scenario," prepared for Joseph Daly, U.S. EPA, Office of Water, Engineering and Analysis Division, January 20, 1999.	3	5

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43	Meinhold, A. Framework for a Comparative Environmental Assessment of Drilling Fluids. Prepared for: National Petroleum Technology Office, U.S. Department of Energy. BNL-66108. November 1998.	3	101
44	Mason, T. Avanti Corporation, Memorandum regarding "Conversion Factor to BOE (Barrels of Oil Equivalents) for Natural Gas and Diesel Fuel," July 12, 1996.	3	10
45	U.S. EPA, "Compilation of Air Pollutant Emission Factors," AP-42, Volume I, April 1976.	3	1
46	Jacobs Engineering Group, "Air Quality Impact of Proposed Lease Sale No. 95," prepared for U.S. Department of the Interior, Minerals Management Service, June 1989.	3	2
47	Sunda, John, SAIC, Memorandum to Allison Wiedeman, U.S. EPA, regarding "The assumptions used in the development of the cost of commercial disposal of produced water using barge transportation," March 10, 1994.	3	2
48	Kennedy, Kerri, The Pechan-Avanti Group, Telecommunications Report on conversation with personnel at Apollo Services regarding "Detailed Information Regarding Apollo's Cuttings Injection System," July 9, 1998.	3	1
49	U.S. EPA, "Compilation of Air Pollutant Emission Factors," AP-42, Volume II, September 1985.	3	16
50	U.S. EPA, "Compilation of Air Pollutant Emission Factors," AP-42, Volume I, Supplement F, July 1993.	3	5
51	U.S. EPA, "Compilation of Air Pollutant Emission Factors," AP-42, Volume I, January 1975.	3	2
52	SAIC, "Evaluation of Personnel Injury/Casualty Data Associated with Drilling Activity for the Offshore Oil and Gas Industry," prepared for U.S. EPA, Engineering and Analysis Division, January 11, 1993.	3	55
53	Daly, Joseph, U.S. EPA. Memorandum to the SBF Regulatory Record regarding Use of Data in Max Annis' Mud Retention Report as Indicator of Shale Shaker. January 22, 1999.	3	1

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No.	Document Title	Volume	No. of Pages
54	White, C., U.S. EPA. Memorandum to Joseph Daly, Energy Branch through Henry Kahn, Statistics Analysis Section regarding Current Performance, when using Synthetic-Based Drilling Fluids, for Primary Shakers, Secondary Shakers, and Vibrating Centrifuge and Model Limits for Percent Retention of Base Fluids on Cuttings for Secondary Shakers and Vibrating Centrifuge. January 29, 1999.	3	7
55	SAIC. Statistical Analysis for the Percent Retention of Drilling Fluids on Cuttings after Treatment by Shakers, Secondary Shakers, and Vibrating Centrifuge (MUD 10). Submitted to: U.S. Environmental Protection Agency, Engineering and Analysis Division. January 25, 1999.	3	39
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28	U.S. EPA. 1997. Interim Guidance for Implementing the Small Business Regulatory Enforcement Fairness Act and Related Provisions of the Regulatory Flexibility Act. February 5, 1997.	6	70
29	U.S. EPA. 1998. Facility Index System Dunn & Bradstreet Detail	6	55
30	Coon, K. and J. Buchert, Versar, Inc. Memorandum to Kathy Zirbser, USEPA, regarding Toxic Weighting Factors (TWFs) for Synthetic Drilling Fluids Pollutants of Concern. October 27, 1998.	6	4
31	U.S. EPA, Toxic and Pollutant Weighting Factors for Proposed Effluent Guidelines for the Oil and Gas Extraction (Synthetic-Based Drilling Fluids) Industry. December 31, 1998.	6	29

I. Pre-1999 Proposal

F. Confidential Business Information

No.	Document Title	Volume	No. of Pages
1	Confidential Business Information regarding subsea pumping system, 1998	NA	

II. 1999 Proposal

A. Preamble and Proposed Regulation

No.	Document Title	Volume	No. of Pages
1	Effluent Limitations Guidelines and New Source Performance Standards for Synthetic Based and Other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point source Category; Proposed Rule. Wednesday, February 3, 1999.	7	68

B. Development Document

No.	Document Title	Volume	No. of Pages
1	U.S. EPA. Development Document for Proposed Effluent Limitations Guidelines and Standards for Synthetic-Based Drilling Fluids and other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category. Office of Science and Technology. EPA-821-B-98-021. February 1999.	7	274

C. Environmental Assessment

No.	Document Title	Volume	No. of Pages
1	U.S. EPA. Environmental Assessment of Proposed Effluent Limitations Guidelines and Standards for Synthetic-Based Drilling Fluids and other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category. EPA-821-B-98-019. February 1999.	7	249

II. 1999 Proposal

D. Economic Analysis

No.	Document Title	Volume	No. of Pages
1	U.S. EPA. Economic Analysis of Proposed Effluent Limitations Guidelines and Standards for Synthetic-Based Drilling Fluids and other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category. EPA-821-B-98-020. February 3, 1999.	7	81

III. Post-1999 Proposal

A. Public Participation

(a) Public Comments on 1999 Proposal

No.	Document Title	Volume	No. of Pages
1	<p>Kosinski, E., The Bethlehem Corporation. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/26/99.</p> <p>Attachments:</p> <p>Kirby, R., EPA Undated. Email communication to E. Kosinski, Bethlehem Corp. requesting hard copy of comments. Bethlehem Corporation. 1999. The Bethlehem Thermal-D™ System Drill Cuttings Treatment System Description. 4/14/99.</p> <p>UK Offshore Operators Association. 1999. Drilling Mud System Control in the UK. Download from UKOOAfilesyn.htm. 5/26/99.</p> <p>Bethlehem Corporation. Undated. The Porcupine® Processor, The Thermal Processing Solution for Drying, Heating, Cooling and Reacting. Brochure.</p>	8	26
2	<p>Candler, J., M-I Drilling Fluids L.L.C. Letter to R. Kirby, EPA in response to proposed effluent limitation guidelines. 5/4/99.</p>	8	2
3	<p>Velez, P.K., Shell Offshore Inc. Letter to M. Rubin, EPA in response to proposed effluent limitation guidelines. 5/3/99.</p> <p>Attachments:</p> <p>Velez, P.K., Shell Offshore Inc. Letter to A. Wiedeman, EPA in response to proposed coastal effluent limitation guidelines. 5/24/95.</p>	8	26

III. Post-1999 Proposal

A. Public Participation

(a) Public Comments on 1999 Proposal

No.	Document Title	Volume	No. of Pages
4	<p>Grooms, A.M., Utility Water Act Group. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/3/99.</p> <p>Attachments:</p> <p>Schlekat, C.E., K.J. Scott, R.C. Swartz, B. Albrecht, L. Antrim, K. Doe, S. Douglas, J.A. Ferretti, D.J. Hansen, D.W. Moore, C. Mueller, and A. Tang. 1995. Interlaboratory Comparison of a 10-Day Sediment Toxicity Test Method Using <i>Ampelisca abdita</i>, <i>Eohaustorius estuarius</i> and <i>Leptocheirus plumulosus</i>. <i>Environ. Tox. and Chem.</i> 14:2163-2174.</p> <p>EPA. 1988. Availability, Adequacy, and Comparability of Testing Procedures for the Analysis of Pollutants Established Under Section 304(h) of the Federal Water Pollution Act. Report to Congress. EPA/600/9-87/030.</p> <p>EPA. 1987. Guidelines for Selection and Validation of USEPA's Measurement Methods. Draft. Office of Acid Deposition, Environmental Monitoring and Quality Assurance. 10/87.</p> <p>Gebhart, J.E., J.D. Messman, and G.F. Wallace. 1988. Interlaboratory Evaluation of SW-846 Methods 7470 and 7471 for the Determination of Mercury in Environmental Samples. Prepared for EPA, Office of Research and Development. EPA/600/4-88/011.</p>	8	391
5	Hood, C.A., Baker Hughes INTEQ. Letter to M. Rubin, EPA in response to proposed effluent limitation guidelines. 5/4/99.	8	5
6	Kirsner, J., Baroid Drilling Fluids. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/3/99.	8	4
7	Rubin, M., API and R.J. Moran, NOIA. Letter to M. Rubin, EPA in response to proposed effluent limitation guidelines. 5/4/99.	8	19
8	Theriot, G.T., Exxon Company, U.S.A. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/4/99.	8	2
9	<p>Farmer, J.M., BP Amoco Exploration. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/12/99.</p> <p>Attachments:</p> <p>Fechhelm, R.G., B.J. Gallaway, and J.M. Farmer. 1999. Deepwater Sampling at a Synthetic Drilling Mud Discharge Site on the Outer Continental Shelf, Northern Gulf of Mexico. SPE 52744.</p> <p>Fechhelm, R.G., B.J. Gallaway, G.F. Hubbard, S. MacLean, and L.R. Martin. Chemical and Biological Effects of Synthetic Drilling Fluid (Petrofree LE) Discharge at a Deepwater Site in the Gulf of Mexico. Draft submitted to <i>Marine Environmental Research</i>.</p>	8	51

III. Post-1999 Proposal

A. Public Participation

(a) Public Comments on 1999 Proposal

No.	Document Title	Volume	No. of Pages
10	Siebert, S.M., State of Florida, Department of Community Affairs. Letter to M. Rubin, EPA in response to proposed effluent limitation guidelines. 5/17/99.	8	3
11	Shavelson, B., Cook Inlet Keeper. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/2/99.	8	3
12	Tibbs, T.R., Alachua County Department of Environmental Protection. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/17/99.	8	2
13	Taylor, W.R., U.S. Department of the Interior, Office of Environmental Policy and Compliance. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/24/99.	8	6
14	Wildermann, R., U.S. Department of the Interior, Minerals Management Service. Letter to R. Kirby, EPA in response to proposed effluent limitation guidelines. 5/28/99.	8	6
15	Morgan, M.C., Derrick Equipment Company. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 6/17/99.	8	2
16	Veil, J.A., Argonne National Laboratory. Comments in response to proposed effluent limitation guidelines. 6/22/99.	8	9
17	Hood, C.A., Baker Hughes INTEQ. Letter to W.B. Hathaway, EPA Region 6 in response to proposed modification of NPDES permit for the western portion of the OCS of the Gulf of Mexico (GMG290000)	8	2
18	Holliday, G.H., Holliday Environmental Services, Inc. Letter to J. Daly, EPA in response to proposed effluent limitation guidelines. 5/18/99. Attachments: API. 1995. Metals Criteria for Land Management of Exploration and Production Wastes: Technical Support Document for API Recommended Guidance Values. API Publ. No. 4600. State of Louisiana. 1990. Amendment to Statewide Order No. 29-B. Department of Natural Resources, Office of Conservation. 10/20/90. Deuel, L.E., Jr. and G.H. Holliday. 1998. Geochemical Partitioning of Metals in Spent Drilling Fluid Solids. In Transactions of ASME, Journal of Energy Resources Technology. 9/98. pp. 208-214. Deuel, L.E., Jr. and G.H. Holliday. 1998. Soil Remediation for the Petroleum Extraction Industry, Second Edition. PennWell Books. Excerpt from Chapter 3.	8	119

III. Post-1999 Proposal

A. Public Participation

(b) Public Meetings

No.	Document Title	Volume	No. of Pages
1	McIntyre, J. 1999. Minutes of the Public Meeting for the Proposed SBF Rulemaking in Houston, TX on March 17, 1999. Memorandum to J. Daly, EPA. 4/19/99. Attachments: Attendance Roster. EPA Presentation Handout.	8	52

III. Post-1999 Proposal

A. Public Participation

(c) Stakeholder Meetings

No.	Document Title	Volume	No. of Pages
1	Minutes of the SBF Stakeholders Meeting, 7/22/99 in Washington, DC Attachments: Attachment A: Agenda. Attachment B: Attendance roster. Attachment C: Handouts.	8	15
2	Summary of Teleconference held 7/29/99 between EPA and stakeholder workgroup chairs.	8	7
3	Minutes of the SBF Stakeholders Meeting, 8/26/99 in Washington, DC Attachments: Attachment A: Agenda. Attachment B: Attendance roster. Attachment C: Data Needs for Post-Proposal SBF Engineering Analysis. Attachment D: EPA's Regulatory Schedule.	8	15
4	Moran, R., National Ocean Industries Association. 1999. E-mail to R. Kirby, EPA regarding industry presentation to PRP Stakeholders. Attachment: Industry presentation made at the August 26 Presumptive Rulemaking Stakeholder meeting.	8	29
5	Johnston, C.A. 1999. Industry and Vendor Stakeholders October 28, 1999, Meeting Summary Notes. Memorandum to File. 11/16/99. Attachments: Attachment A: Agenda. Attachment B: Attendance roster. Attachment C: SWACO presentation and Verti-G Cuttings Dryer Brochure. Attachment D: Apollo Services, Around the World, MRU Projects. Attachment E: Elgin National Industries Inc., Process Management. Attachment F: JB Equipment presentation and Mud 10/6 brochure. Attachment G: EPA Engineering Questionnaire.	8	83

III. Post-1999 Proposal

A. Public Participation

(c) Stakeholder Meetings

No.	Document Title	Volume	No. of Pages
6	Johnston, C.A. 1999. Draft Meeting Summary Notes from November 18, 1999 Synthetic-Based Drilling Fluids Stakeholders Meeting, Washington, DC. Memorandum to File. 11/18/99. Attachment A: Agenda. Attachment B: Attendance roster. Attachment C: J. Candler, M-I Drilling Fluids Presentation. Attachment D: Regulatory Scenarios for SBF Retention on Cuttings. Attachment E: SBF retention data review. Attachment F: Solids control data needs.	8	18
7	Johnston, C.A. 2000. Draft Meeting Summary Notes from January 27, 2000 Synthetic-Based Drilling Fluids Stakeholders Meeting, Washington, DC. Memorandum to File. 2/11/00. Attachment A: Stakeholder Meeting Agenda. Attachment B: Stakeholder Meeting Attendees. Attachment C: EPA Presentation. Attachment D: J. Candler, M-I Drilling Fluids Presentation.	8	27

III. Post-1999 Proposal

A. Public Participation

(c) Stakeholder Meetings

No.	Document Title	Volume	No. of Pages
8	<p>Johnston, C.A. 2000. USEPA/OW/OST, Memorandum to File regarding Stakeholder Meetings and Comments Regarding Draft SBF FR Notice, 3/17/00.</p> <p>Attachment A: Johnston, C., EPA Email to SBF Rulemaking Stakeholders regarding Transmittal of Draft SBF FR Notice and Next SBF Meeting Details. 3/1/00.</p> <p>Attachment B: Johnston, C., EPA E-mail to SBF Rulemaking Stakeholders regarding Draft SBF FR Notice Teleconference. 3/7/00.</p> <p>Attachment C: Johnston, C., EPA E-mail to SBF Rulemaking Stakeholders regarding Action Items from 3/9/00 Teleconference. 3/10/00.</p> <p>Attachment D: SBF Stakeholder Comments on Draft SBF FR Notice.</p> <p>Attachment E: SBF Stakeholder Meetings on Draft SBF FR Notice:</p> <p>Johnston, C.A. 2000. Draft Meeting Note from March 9, 2000 Teleconference Call. Memo to File. 3/10/00.</p> <p>Johnston, C.A. 2000. Telephone Call with Shell Offshore Inc. Regarding Sub-sea Pumping Systems (3/13/00). Memo to File. 3/14/00.</p> <p>Johnston, C.A. 2000. Cuttings Retention Data/Model Review I [Minutes from Short Telephone Conference Call on 3/13/00]. Memo to File. 3/15/00.</p> <p>Johnston, C.A. 2000. Cuttings Retention Data/Model Review II [Minutes from Cuttings Retention Meeting on 3/16/00]. Memo to File. 3/17/00.</p>	8	189
9	<p>Henry, L. 1999. Synthetic Mud EPA Site Visit - Summary. Email to R. Kirby, EPA with industry summary of EPA's offshore field trip. 12/13/99.</p>	8	3
10	<p>Johnston, C.A. 2000. Summary Notes from April 11, 2000 Meeting with Baroid Drilling Fluids on Regulatory Trends in the North Sea and Ester-SBFs, Washington, DC. Memorandum to File. 4/17/00.</p> <p>Attachment A: Meeting Attendees.</p> <p>Attachment B: PARCOM Decision 92/2</p> <p>[This document submitted to OW Docket on 4/21/00.]</p>	8	7

III. Post-1999 Proposal

A. Public Participation

(c) Stakeholder Meetings

No.	Document Title	Volume	No. of Pages
11	Johnston, C.A. 2000. Summary Notes from April 13, 2000 Teleconference with Canada-Newfoundland Offshore Petroleum Board, Washington, DC. Memorandum to File. 4/17/00. Attachment A: Teleconference Participants Attachment B: EPA Presentation Attachment C: EPA Follow-up E-mail to C-NOPB [This document submitted to OW Docket on 4/21/00.]	8	25
12	Johnston, C.A. 2000. Minutes From Teleconference with Norwegian Institute for Water Research (NIVA) on April 18, 2000, Washington, DC. Memorandum to File. 5/1/00. [This document submitted to OW Docket on 5/1/00.]	8	4

III. Post-1999 Proposal

B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
1	Veil, J., J. Daly, and N. Johnson. 1999. EPA speeds regs for offshore synthetic-based mud. <i>Oil & Gas Journal</i> 9/13/99. pp 78-85.	8	5
2	Limia, J. 1999. Electronic communication with R. Kirby, EPA. Methodology used for measuring free oil on treated cuttings. 9/27/99.	8	2
3	Limia, J. 1999. Silica Micro-encapsulation: A Technology for the Elimination of the Environmental Impact of Cutting Discharges. Presented at the 1999 SPE/EPA Exploration and Production Environmental Conference, Austin, TX 2/28-3/3. SPE 52747.	8	7
4	Bradford, D.W., F.B. Growcock, E. Malachosky, and C.N. Fleming. 1999. Evaluation of Centrifugal Drying for Recovery of Synthetic-Based Drilling Fluids. Presented at the 1999 SPE/EPA Exploration and Production Environmental Conference, Austin, TX 2/28-3/3. SPE 56566.	8	11
5	U.S. Dept. of Energy, Office of Fossil Energy. 1999. Environmental Benefits of Advanced Oil and Gas Exploration and Production Technology. DOE-FE-0385. 10/99.	9	167
6	MMS. 1999. Deepwater Development Systems in the Gulf of Mexico Basic Options. Download from site: www.gomr.mms.gov/homepg/offshore/deepwatr/options.html .	9	2
7	McMillin, K. 1999. Industry studies fluids management, long-term effects of synthetic muds; fluid firms trying to meet global standard. <i>Offshore</i> . 9/99. pp. 96-125.	9	20
8	Johnston, C. 2000. Current List of References Used in Preparation of SBF NODA. Memorandum to J. Ray, Equilon Enterprises. 1/12/00.	9	4
9	EPA. 1999. EPA Office of Compliance Sector Notebook Project, Profile of the Oil and Gas Extraction Industry. EPA/310-R-99-006.	9	164
10	Johnston, C.A. 2000. Superfund Sites Contaminated with Oilfield Wastes. Memorandum to the Record. 1/19/00.	9	7
11	Carter, M.W., Phillips Petroleum. 2000. Responses to questions concerning SBF usage in Cook Inlet. 1/7/00.	9	6
12	McIntyre, J., Pechan-Avanti. 1999. Telephone Communication Report. Communication with D. MacEachern, Shell Offshore re: Questions Regarding Solids Control Technology. 12/15/99.	9	2

III. Post-1999 Proposal

B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
13	<p>Johnston, C.A. 2000. UKOOA Research Documents. Memorandum to the Record. 2/14/00.</p> <p>Attachments:</p> <p>Bell, N, M. Smith, and A. Manning. 2000. Determination of the Physical Characteristics of Cuttings Piles, using Existing Survey Data and Drilling Information. R&D Programme 1.1. Prepared by Cordah. 1/19/00.</p> <p>Roddie, B., A. Skadsheim, D. Runciman, and G. Kjeilen. 1999. UKOOA Drill Cuttings Initiative Research and Development Programme Project 1.2 Cuttings Pile Toxicity. Version 2. 12/16/99.</p> <p>Dames & Moore and NIOZ. 1999. UKOOA Drill Cuttings Initiative Research and Development Programme Activity 2.1 Faunal Colonisation of Drill Cuttings Pile Based on Literature Review. Document 43925-001-403. 12/23/99.</p> <p>Kjeilen, G., S.J. Cripps, A. Woodham, D. Runciman, and S. Olsen. 1999. UKOOA Drill Cuttings Initiative Research and Development Programme Project 2.3: Natural Degradation and Estimated Recovery Time-scales. Version 2. 10/12/99.</p> <p>Ian Murray Engineering Ltd. Undated. UKOOA Drill Cuttings Initiative R&D Programme Final Report for Study Item 3.1: Identification & Quantification of Potential Disturbance of In-Situ Piles. Rev C.</p> <p>Mitchell, D., R. Swannell, G. Kjeilen, S. Ramstad, O.D. Brakstad, S. Cripps. 2000. UKOOA Project 4.1 - Acceleration of Natural Degradation. AEAT/ERRB/ED12049/R/001. 1/00.</p> <p>Cleator, B. 1999. The Practicality of Covering Drill Cuttings In Situ: Task 5.1. Prepared by Environmental Resources Management. 12/99.</p> <p>Shimmield, G.B., E. Breuer, D.G. Cummings, O. Peppe, and T. Shimmield. Undated. Contaminant Leaching from Drill Cuttings Piles of the Northern and Central North Sea: Field results from the Beryl "A" cuttings pile.</p>	9	648
	<p>Detailed Description of Executive Summary. Collation of Phase 1 Reports and Preparation of an Executive Summary Report, "Key facts" Data Sheet and Presentation. Http://www.ukooa.co.uk/issues/drillcuttings/rd10-1.htm. 2/17/00.</p> <p>Detailed Description of Data Gaps. Collation of Phase 1 Recommendations for Future/Additional Studies and Preparation of Summary Report. Http://www.ukooa.co.uk/issues/drillcuttings/rd10-1.htm. 2/17/00.</p>		

III. Post-1999 Proposal

B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
14	Limia, J.M. and R.L. Peresich. 1992. Esters: A Solution to the Environmental Problems Associated with Oilwell Drilling. Presented at the VII Congreso Latino-Americano de Perforación, Rio de Janeiro, Brazil. 10/92.	9	12
15	Getliff, J., A. Roach, J. Toya, J. Carpenter. 1997. An Overview of the Environmental Benefits of LAO Based Drilling Fluids for Offshore Drilling. Presented at the 5 th International Conference on Minimizing the Environmental Effects of Drilling Operations. 6/23/97.	9	10
16	Davies, J.M. and P.F. Kingston. 1992. Sources of Environmental Disturbance Associated with Offshore Oil and Gas Developments. In: W.J. Cairns (Ed.) North Sea Oil and the Environment: Developing Oil and Gas Resources, Environmental Impacts and Responses. University Press, Cambridge. pp. 417-440.	9	24
17	Bell, N., S.J. Cripps, T. Jacobsen, G. Kjeilan, G.B. Picken. 1998. Review of Drill Cuttings Piles in the North Sea, Final Report, A Report for the Offshore Decommissioning Communications Project, Aberdeen, UK.	9	90
18	Hanni, G., J. Hartley, R. Munro, A. Skullerd. 1998. Evolutionary Environmental Management of Drilling Discharges: Results without Cost Penalty. SPE 46617. Provided by L. Henry via e-mail 2/1/00.	9	5
19	Johnston, C.A. 1999. Follow-up Questions Regarding Drilling Operations at the Ram-Powell TLP. Memorandum to D. MacEachern, Shell Offshore Inc., 12/7/99 and Responses of 12/17/99 via email.	9	5
20	McIntyre, J. 2000. Engineering Review of Recent SBF Solids Control Data. Memorandum to K. Mahsman, ERG. 2/22/00. Attachment A: SBF Solids Control Data Submitted to EPA in the Post-Proposal Period Following February 1999. Attachment B: Timeline of 1999 Data Requests and Submissions to and by EPA. Attachment C: Summary Data File Lists Originally Distributed by EPA at the November 18, 1999 SBF Stakeholders Meeting. Attachment D: Standardized Spreadsheets Originally Distributed by EPA at the November 18, 1999 SBF Stakeholders Meeting. Attachment E: Additional Standardized Spreadsheets Generated by EPA Between November 18 and December 2, 1999.	9	217

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B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
21	Johnston, C.A. 2000. Post-SBF Notice Cuttings Retention Data. Memorandum to File. 3/21/00. Attachment A: Printouts of data files.	10	132
22	Johnston, C.A. 1999. Memorandum to File regarding Conversation with Fred Duffy, TNRCC, with attached Newpark Resources TNRCC permit. 12/22/99.	10	9
23	Johnston, C.A. 2000. Memorandum to File regarding January 19, 2000 Telephone Conversation with Alaska Oil and Gas Conservation Commission (AOGCC), with attached AOGCC regulations. 1/20/00. Attachments: 20 Alaska Administrative Code (AAC) Sections 25.080, 25.245, 25.252, 25.412, 25.430, 25.432, 25.440, 25.450, and 25.460. Alaska Oil and Gas Commission. 1998. Findings on Request of Phillips Petroleum Co. for an Aquifer Exemption Order for the North Cook Inlet Field. Aquifer Exemption Order #4. 9/29/98. Alaska Oil and Gas Commission. 1998. Findings on Application of Phillips Petroleum Co. for an Order Allowing the Underground Disposal of Class II Fluids in the North Cook Inlet Unit A-12 Well. Disposal Injection Order #17. 9/29/98.	10	21
24	Johnston, C.A. 2000. Memorandum to File regarding January 21, 2000 Telephone Conversation with Louisiana Department of Natural Resources (LDNR) with attached list of Louisiana NOW TSDFs. 1/21/00.	10	8
25	Quarterman, C. 1997. MMS and the New Frontiers. Presented at the Offshore Technology Conference. 5/5/97.	10	5
26	Johnston, C.A. 1999. Memorandum to File regarding Meeting Summary Notes from Newpark Resources, Inc. Facilities Visit and Safeguard SWACO Presentation at the Louisiana Gulf Coast Oil Exposition (LAGCOE) on October 26, 1999. 11/16/99. Attachment A: Newpark Performance Services, Inc. Brochure, "Working Together to Reduce Drilling Costs, Minimization. Management." Attachment B: Newpark Drilling Fluids, Inc. Brochure, "DeepDrill" Attachment C: LAGCOE. Official Program Guide, Louisiana Gulf Coast Oil Exposition, October 26-28, 1999, Lafayette, Louisiana.	10	28

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B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
27	Turgeon, K. 1998. National Ocean Initiatives. Presentation for the MMS OCS Policy Committee Meeting, 10/20-21/98.	10	2
28	Baker, B.D., J.M. Englehardt, and J.D. Reid. 1999. Large Scale NOW/NORM Disposal Through Slurry Waste Injection. SPE 53821. Presented at the 1999 Latin American and Caribbean Petroleum Engineering Conference, Caracas, Venezuela, 4/21-23/99.	10	11
29	Baker, B.D., J.M. Englehardt, and J.D. Reid. 1999. Large Scale NOW/NORM Disposal Through Slurry Waste Injection: Data Analysis and Modeling. SPE 56491. SPE Annual Technical Conference and Exhibition, Houston, Texas, 10/3-6/99.	10	11
30	Friedheim, J.E. 1995. Learning from the Latest Experiences of Drilling with New Synthetic Fluids. Presented at the IIR Ltd Conference on Drilling & Well Completion Technology, 1/26/95.	10	17
31	Friedheim, J.E. 1998. Synthetic Mud Formulations to Minimise Environmental Impact. Presented at 6 th International Conference of Minimising the Environmental Effects of Drilling Operations, 6/98.	10	12
32	Derkies, D.L. and S.H Souders. 1993. Pollution Prevention and Waste Minimization Opportunities for Exploration and Production Operations. SPE 25934.	10	6
33	Schaanning, M. and T. Bakke. 1997. Environmental Fate of Drill Cuttings Deposited on Marine Sediment Communities in a Mesocosm Laboratory and in the Field. UK National Workshop on Drilling Fluids, 11/97.	10	10
34	Canada-Newfoundland Offshore Petroleum Board. 2000. News Release, Offshore Drilling Fluid Discharges. 1/21/00.	10	2
35	Johnston, C. 1999. Meeting Summary Notes from JB Equipment Facility Visit on October 29, 1999. Memorandum to File. 11/16/99.	10	3

III. Post-1999 Proposal

B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
36	Johnston, C. 1999. Meeting Summary Notes from EPA Staff October 27, 1999 Visit to Two Deepwater Platforms: Ram-Powell (Viosca Knoll 956) and Ocean America (Green Canyon 645). Memorandum to File. 11/16/99. Attachments: Attachment A: Shell Offshore Inc. Welcome to Ram/Powell. Brochure. Attachment B: Summary of Ram-Powell TLP Rig Equipment and Services. Attachment C: Site Visit of EPA and API Effluent Guidelines Task Force, Agenda. Attachment D: Cuttings Retention Data. Attachment E: Ocean America Treatment Diagrams. Attachment F: QTEC Ltd. QTEC Solids/Mud Loss Control Services. Attachment G: C.S.I. Dryer System Legend and Diagrams.	10	29
37	Burke, C.J. and J.A. Veil. 1995. Potential Environmental Benefits from Regulatory Consideration of Synthetic Drilling Muds. Argonne National Laboratory, ANL/EAD/TM-43.	10	32
38	Ballantine, W.T. 2000. Letter to C. Johnston, EPA with handwritten comments on October 1999 trip report from visit to Newpark Resources facilities. 1/4/00.	10	2
39	MacEachern, D., Shell. 1999. E-mail to C. Johnston concerning questions raised during field visit. 11/15/99.	10	2
40	Henry, L., Chevron. 2000. E-mail to C. Johnston transmitting responses from T. Helm, Jr. to engineering questions. 1/5/00.	10	1
41	Carter, M.W. 2000. E-mail to C. Johnston transmitting responses to engineering questions. 1/7/00.	10	6
42	Sullivan, F.W., Unocal. 2000. Email to C. Johnston concerning Cook Inlet drilling. 1/20/00.	10	1
43	Ensele, R., MMS. 2000. E-mail to C. Johnston concerning drilling fluid spills. 3/1/00.	10	2
44	Henry, L., Chevron. 1999. E-mail to C. Johnston concerning OCS North Carolina activity. 12/23/99.	10	1
45	Miller, K., Apollo Services. 2000. Email to C. Johnston transmitting data on two wells. 1/11/00.	10	3
46	Johnston, C. 2000. E-mail to P. Scott, Marathon Oil transmitting timeline of cutting retention data. 3/16/00.	10	3

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B. Data Gathering

(a) EPA Data/Information Collection Efforts

No.	Document Title	Volume	No. of Pages
47	McIntyre, J. 1999. Telephone Communication with J. Hurst, JB Equipment concerning Mud 10 Solids Control Unit and operating data. 10/4/99.	10	21
48	McIntyre, J. 1999. Telephone Communication with D. MacEachern, Shell Offshore, Inc. concerning questions regarding solids control technology. 12/15/99.	10	2
49	McIntyre, J. 1999. Telephone Communication with J. Candler, M-I Drilling concerning pre-proposal retention data. 12/9/99.	10	1
50	McIntyre, J. 1999. Telephone Communication with D. Bradford, BP-Amoco concerning solids control flow patterns. 12/9/99.	10	1
51	Parker, M., ExxonMobil. 2000. E-mail response to questions concerning onsite injection for deepwater wells. 1/3/00.	10	1
52	Derkics, D. 1999. FYI - Drilling technology marches on. . . . Email to M. Rubin, EPA. 12/8/99.	10	2
53	Sullivan, F., Unocal. 2000. SBF Usage in CI - Reply. Email to C. Johnston, EPA. 1/28/00.	10	2
54	Johnston, C.A. 1999. Meeting with Jose Limia (INTEQ, Baker Hughes) on SiTEQ. Memorandum to File. 10/12/99.	10	2
55	Johnston, C.A. 1999. EPA Meeting with Mr. Jim Ray (Equilon Enterprises, LLC), October 19, 1999. Memorandum to File. 10/19/99.	10	3
56	Johnston, C.A. 2000. Documents from Recent SEBA Meeting. Memorandum to File. 4/21/00. [This document submitted to OW Docket on 4/21/00.]	10	74
57	Hall, John. 2000. Papers on European Regulations/Impact Assessments. Memorandum to Carey Johnston, EPA. April 13, 2000. Attachments: - Fuglestad, Jon L. Update on Norwegian Regulations - Bryne, Karl Henrik. Environmental Monitoring on the Norwegian Continental Shelf - The Regional Approach - Williams, Urban, Dan Ruginis, Ian Denness, Gregory Lever. Evaluation of Cuttings Management Options: Terra Nova Offshore Oil Development. Presented at IBC's 8 th Annual International Conference: Minimizing the Environmental Effects of Drilling Operations, March 20-21, 2000, Aberdeen, Scotland, UK. [This document submitted to OW Docket on 4/21/00.]	10	46

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B. Data Gathering

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No.	Document Title	Volume	No. of Pages
1	Parker, M. 1999. Industry Operator Answers to EPA Solids Control Questions. Personal communication between M. Parker, Exxon Mobil Production Company and R. Kirby, EPA. 11/16/99.	10	14
2	Farmer, J. 1998. Letter to J. Daly, EPA on cuttings discharges for the Pompano Phase II program. 12/2/99.	10	3
3	Centrifugal Services, Inc. 1999. WSM-01 Dryer System. Performance data based on 5 case studies. Presented at meeting with EPA, DOE, and industry representatives. 3/99.	10	10
4	Candler, J., M-I Drilling Fluids L.L.C. 1999. Letter to R. Claff, API submitting information on the emulsification package used with olefin-based synthetic fluids. 4/5/99.	10	34
5	CSA, Inc. 2000. Revised Scope of Work for Gulf of Mexico Comprehensive Synthetic Based Muds Monitoring Program. Submitted to J.P. Ray. 1/6/00.	10	18
6	Henry, L. 2000. Communication transmitting documents to C. Johnston, EPA. 1/26/00. Attachments: Draft Best Management Practices for Minimizing Release of Synthetic and Non-aqueous Fluids. Monro, R., Amoco. Undated. Oil on Cuttings v Oil Discharges - the Relationship.	10	9
7	Parker, M. 1999. Data provided to EPA at meeting on 10/28/99. Attachments: Deep Water Experience Report, spreadsheet DeLuca, M. (Ed.). 1999. Record 25 deepwater discoveries worldwide in 1999. <i>Offshore</i> . 9/99. 4pp. Untitled article from Hart's E&P. October 1999. pp. 104-110 Kellas, G. 1999. Low cost exploration punished by high state takes. <i>World Oil</i> . 10/99. 2pp. Smith, J.E. 1999. Spar most likely for BP Amoco's ultra-deepwater subsalt discovery. <i>Offshore</i> . 9/99. 2pp. Hall, J. 1999. Ester based drilling fluids: still the best environmental option? <i>Offshore</i> . 10/99. 3pp.	10	20

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No.	Document Title	Volume	No. of Pages
8	<p>Hood, C., Baker Hughes INTEQ, Letter to K. Ditthavong, EPA, transmitting copies of toxicity reports. 3/7/00.</p> <p>Attachments:</p> <ol style="list-style-type: none"> 1. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-095, 99-031-096. 4/99. 2. Environmental Enterprises USA, Inc., "<i>Leptocheirus plumulosus</i> Acute Static Toxicity Test 96-Hour Exposure to Formulated Sediment Spiked with C14/16/18," 9/99. 3. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in 96-Hour and 10-Day Static, Nonrenewal Test," Study Number: 00-031-001. 10/99. 4. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-067, 99-031-068. 3/99. 5. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-100. 5/99. 6. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-101. 5/99. 7. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-103. 5/99. 8. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-104. 5/99. 	10	804

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No.	Document Title	Volume	No. of Pages
	<p>9. PBS&J Environmental Toxicology Laboratory, "Acute Toxicity of a Chevron Chemical Company Synthetic Base Fluid (SBF), C14-C20 Alpha Olefin Isomerized Blend, to <i>Leptocheirus plumulosus</i> in a 10-Day Amended Sediment Toxicity Test," prepared for Chevron Chemical Company, Document No. 990766. 6/99.</p> <p>10. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-069, 99-031-070. 3/99.</p> <p>11. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-090. 4/99.</p> <p>12. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-105. 5/99.</p> <p>13. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-093, 99-031-094. 5/99.</p> <p>14. Environmental Enterprises USA, Inc., "<i>Leptocheirus plumulosus</i> Acute Static Toxicity Test 96-Hour Exposure to Formulated Sediment Spiked with Am-Drill 1000, C16/18." 8/99.</p> <p>15. Environmental Enterprises USA, Inc., "<i>Leptocheirus plumulosus</i> Acute Static Toxicity Test 96-Hour Exposure to Formulated Sediment Spiked with Chevron, C16/18." 8/99.</p> <p>16. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in 96-Hour and 10-Day Static, Nonrenewal Test," Study Number: 00-031-002. 10/99.</p> <p>17. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-073, 99-031-074. 3/99.</p>		

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No.	Document Title	Volume	No. of Pages
	<p>18. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-077, 99-031-078. 4/99.</p> <p>19. Environmental Enterprises USA, Inc., "<i>Leptocheirus plumulosus</i> Acute Static Toxicity Test 96-Hour Exposure to Formulated Sediment Spiked with Bio-Base 130." 8/99.</p> <p>20. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-065, 99-031-066. 3/99.</p> <p>21. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-099. 5/99.</p> <p>22. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-102. 5/99.</p> <p>23. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-071, 99-031-072. 4/99.</p> <p>24. Environmental Enterprises USA, Inc., "<i>Leptocheirus plumulosus</i> Acute Static Toxicity Test 96-Hour Exposure to Formulated Sediment Spiked with C14/16/18/20." 8/99.</p> <p>25. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Number: 99-031-092. 4/99.</p> <p>26. Stillmeadow, Inc., Environmental Toxicology Laboratory, "Toxicity of a Base Fluid Sample to the Marine Amphipod, <i>Leptocheirus plumulosus</i>, in a 10-Day Static, Nonrenewal Test," Study Numbers: 99-031-075, 99-031-076. 4/99.</p>		
9	Hood, C.A., Baker Hughes. 2000. Corrections to Sediment Toxicity Report #6665. Memorandum to K. Ditthavong. 3/21/00.	11	37

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(b) Data/Information Provided by Industry

No.	Document Title	Volume	No. of Pages
10	Parametrix, Inc., "Evaluation of Bioassay Protocols to Assess the Sediment Toxicity of Synthetic-Based Drilling Fluids to Four Bioassay Species." Draft, Submitted to API. 3/99.	11	793
11	<p>Glickman, A., Co-Chair, SBM Toxicity Work Group, Letter to Jim Ray, Equilon Enterprises LLC, regarding Synthetic Based Mud Toxicity Data to EPA, with attached table of Synthetic Based Mud Toxicity Work Group Data Report Submittal to EPA. 1/13/00.</p> <p>Attachments:</p> <p>Ray, J., SBM Research Coordinator, NOIA/API/OOC/PESA Synthetics Program, letter to K. Dithavong, EPA, regarding Release of Research Documents to EPA. 1/19/00.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-020)" from 2/4/99.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-017)" from 1/28/99.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-018)" from 1/28/99.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-019)" from 2/4/99.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-026)" from 7/15/99.</p> <p>Hein, J., L. Burney, and D. Stauffer, BP Amoco, Interim Report, "Marine Closed Bottle Anaerobic Biodegradation of Hydrocarbons." 11/29/99.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Anaerobic Closed-Bottle Test System, 2000mg/L (ESB-027)" from 8/27/99.</p>	11	214

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No.	Document Title	Volume	No. of Pages
	<p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Solid-Phase Test in a Closed Water System, 1,000mg/L (ESB-015)" from 12/17/98.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Solid-Phase Test in a Closed Water System, 10,000mg/L (ESB-024)" from 12/17/98.</p> <p>M-I LLC, Environmental Laboratory Report, Interim Report, "Biodegradation of Base Fluids, Solid-Phase Test in a Closed Water System, 5,000mg/L (ESB-016)" from 12/17/98.</p> <p>Author Unknown. 1999. Interim Report, Biodegradation of Base Fluids, Aerobic Respirometry Test, 2000 mg/kg (138294A SD). 5/19/99.</p> <p>Candler, J., S. Rabke, and A. Leuterman, M-I LLC, "Predicting the Potential Impact of Synthetic-Based Muds with the Use of Biodegradation Studies," SPE 52742, 1999 SPE/EPA Exploration and Production Environmental Conference, Austin, Texas. 2/28-3/3/99.</p>		
12	<p>Bernier, R., SBM Biodegradation Workgroup Chair, NOIA/API/OOC/PESA Synthetics Program, Letter to K. Ditthavong, EPA, regarding Sediment Used in Biodegradation Studies of Synthetic Base Fluid. 1/14/00.</p> <p>Attachment: US Department of the Interior, Geological Survey, Map of Virginia Point, Texas, Virginia Point Quadrangle, Texas-Galveston Co. 7.5 Minute Series (Topographic) Provisional Edition 1994.</p>	11	1+ oversized map
13	<p>SBM Sediment Toxicity Protocol Development Work Group. Undated. Synthetic Based Muds Research Program Request for Proposal on an Evaluation of Bioassay Protocols to Monitor the Aquatic Toxicity of Synthetic Drilling Fluids.</p> <p>Attachment A: Use of Formulated Sediments in the Synthetic-Based Mud (SBM) Toxicity Testing Program.</p> <p>Attachment B: Procedure for Homogenizing Synthetic-based Muds (SBM) for use in Sediment Toxicity Tests.</p> <p>Attachment C: GC-FID Method to Detect Non-Aqueous Fluids in Marine Sediment Samples (Modification of EPA 3550B Method).</p>	11	14

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No.	Document Title	Volume	No. of Pages
14	Gonzalez, R. 2000. Environmental and Safety Factors Subsea Pumping System vs. Conventional Marine Drilling. 1/00. Attachments: Howard, D., MMS. 1999. Letter to P. Velez, Shell Offshore, 5/24/99. Ferguson, J., EPA, Region 6. 1999. Letter to K. Satterlee, Shell Offshore, 7/30/99.	11	25
15	Farmer, J.M. 2000. Data for the SBM Notice of Data Availability. E-mail from J.M. Farmer, BP Amoco to C. Johnston, EPA 3/1/00.	11	5
16	Henry, L., Chevron. 2000. Industry Initial Response to Draft NODA. Email to C. Johnston, EPA. 3/8/00.	11	2

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C. Statistical and Engineering Analyses

(a) Revised Statistical Analysis of Retention-On-Cuttings

No.	Document Title	Volume	No. of Pages
1	EPA. 2000. Statistical Analysis of the Percent Retention of Drilling Fluids on Cuttings After Treatment. Office of Science and Technology.	11	48
2	Parker, M., ExxonMobil 2000. E-mail to C. Johnston concerning review of statistical analysis. 3/22/00.	11	2
3	Annis, M. 1999. Analysis of Data from Cheryl Hood, Baker Hughes. 8/11/99.	11	3

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(b) Revised Engineering Models and Compliance Cost Analyses

No.	Document Title	Volume	No. of Pages
1	Orentas, N. 2000. Revised Number of Days to Drill Model SBF Wells. Memorandum from N. Orentas, Pechan-Avanti Group, to K. Mahsman, ERG. 2/22/00. Attachment A: Derivation of Drilling Days.	11	5
2	McIntyre, J. 2000. Revised Engineering Models and Compliance Costs for SBF Rulemaking. Memorandum from J. McIntyre, Pechan-Avanti Group to K. Mahsman, ERG. 2/23/00. Attachment A: Detailed Calculations of Discharged Cuttings Composition per Model Well. Attachment B: Detailed Compliance Cost Worksheets, Existing Sources. Attachment C: Detailed Compliance Cost Worksheets, New Sources. Attachment D: Detailed Small Volume Zero Discharge Costs.	11	46
3	Orentas, N. 2000. Revised Supply Boat Trips under the Synthetic-Based Drilling Fluid (SBF) Zero Discharge Option. Memorandum from N. Orentas, Pechan-Avanti Group, to K. Mahsman, ERG. 2/23/00. Attachment A: Detailed Supply Boat and Hauling of SBF Cuttings Information Under Zero Discharge. Attachment B: Detailed Supply Boat and Hauling of SBF Cuttings Information Under Cuttings Discharge at 2.45% SBF Retention and Zero Discharge of Fines.	11	10

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(c) Revised Pollutant Loadings Analyses

No.	Document Title	Volume	No. of Pages
1	Orentas, N. 2000. Revised Pollutant Loadings for the SBF Rulemaking. Memorandum from N. Orentas, Pechan-Avanti Group, to K. Mahsman, ERG. 2/25/00. Attachment A: Detailed Per Model Well Loadings Calculations. Attachment B: Loadings Summary and Calculations Per Geographic Area for Existing and New Sources.	11	27

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D. Non-water Quality Impact Analyses

No.	Document Title	Volume	No. of Pages
1	Bowler, L.K. and N.S. Orentas. 1999. Comparison of Safety Data. Memorandum to J.K. McIntyre, 12/28/99.	12	7
2	API. 1998. Summary of U.S. Occupational Injuries, Illnesses, and Fatalities in the Petroleum Industry, As Reported to the American Petroleum Institute. Covering U.S. Petroleum and Petrochemical Operations of Reporting Companies for 1997. API Publ. 2376. 4/98.	12	47
3	Hauser, B., B. Lewis, and W. Rhome. 1998. Findings and Recommendations of the Crane Incident Workgroup. Prepared by the MMS Engineering and Operations Division. 10/16/98.	12	15
4	MMS. 1999. Incidents Associated with Oil & Gas Operations Outer Continental Shelf 1995 - 1996. Downloaded (11/16/99) from MMS website: www.mms.gov/eod/stats/incident/forward.htm .	12	58
5	Offshore Marine Service Association (OMSA). 1998. Safety Survey Statistics (1989 - 1998). Summary statistics and survey participation response form.	12	14
6	Veil, J. 1999. Safety Survey Statistics (1989 - 1998). Submitted to SBF Stakeholders Workgroup.	12	1
7	Schoennagel, C., Jr. 1998. List of Safety Alerts Concerning Crane Accidents. MMS Safety Alert, Notice No. 175. 7/20/98.	12	1
8	Johnston, C.A. 2000. Superfund Sites Contaminated with Oilfield Wastes. Memorandum to File. 1/19/00. Attachment A: Telephone Conversation with Tom Ballantine, Newpark Resources. 1/4/00.	12	7
9	Orentas, N. 2000. Monetized Benefits/Impacts Analysis of Air Emissions for the SBF Rulemaking. Memorandum from N. Orentas, Pechan-Avanti Group, to K. Mahsman, ERG. 2/28/00.	12	19
10	Ballantine, T., Newpark Resources. 1999. E-mail to R. Kirby concerning NWQI issues. 10/8/99.	12	1
11	O'Very, D., USDOJ. 1999. Oilfield injection/landfarming enforcement cases. Email to C. Johnston, EPA. 12/14/99.	12	3
12	Candler, J., M. Churan and L. Conn. 1995. Laboratory and Field Measurements of Vapors Generated by Organic Materials in Drilling Fluids. SPE 35866.	12	14

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D. Non-water Quality Impact Analyses

No.	Document Title	Volume	No. of Pages
13	Veil, J., Argonne National Laboratory. 1999. Letter to R. Kirby transmitting information concerning onshore disposal capacity for drilling wastes generate offshore. 11/5/99. Attachments: Safety Survey Statistics Veil, J. 1999. Update on Onshore Disposal of Offshore Drilling Wastes. 11/99. Railroad Commission of Texas Commercial Surface Disposal Facilities. Data printout.	12	22
14	Veil, J., Argonne National Laboratory. 1999. Memorandum to R. Kirby and J. McIntyre transmitting additional data on California disposal sites. 11/19/99.	12	6
15	Orentas, N. 2000. Revised Non-Water Quality Environmental Impacts for the SBF Rulemaking. Memorandum to K. Mahsman, ERG. 2/24/00. Attachment A: Calculations of Fuel Usage and Air Emissions for Existing Sources. Attachment B: Calculations of Fuel Usage and Air Emissions for New Sources. Attachment C: Waste Generation Calculations.	12	73

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E. Analytical Methods

No.	Document Title	Volume	No. of Pages
1	API SBM Biodegradation Research Group. 1999. Anaerobic Biodegradation of Non-aqueous Drilling Mud Fluids by Marine Closed Bottle Biodegradation: Modification of ISO/DIS 111734, Marine Anaerobic Closed Bottle Biodegradation Test, Draft Report. 12/99.	12	14
2	Henry, L., Chevron. 1999. Biodegradation Draft Protocols for EGL's Consideration. Email to M. Rubin, EPA. 12/16/99.	12	1
3	Test Protocol: Evaluation of the Toxicity of Synthetic Drilling Fluids to the Mysid Shrimp, <i>Mysidopsis bahia</i> , in a Sediment-Water Interface Test System. Attachment A: Use of Formulated Sediments in the Synthetic-Based Mud (SBM) Toxicity Testing Program. Attachment B: Procedure for Homogenizing Synthetic-based Muds (SBM) for Use in Sediment Toxicity Tests. Attachment C: GC-FID Method to Detect Non Aqueous Fluids in Marine Sediment Samples (Modification of EPA 3550B Method).	12	8
4	Test Protocol: Evaluation of the Aquatic Toxicity of Synthetic Drilling Fluids to the Amphipod, <i>Leptocheirus plumulosus</i> . Attachment A: Use of Formulated Sediments in the Synthetic-Based Mud (SBM) Toxicity Testing Program. Attachment B: Procedure for Homogenizing Synthetic-based Muds (SBM) for Use in Sediment Toxicity Tests. Attachment C: GC-FID Method to Detect Non Aqueous Fluids in Marine Sediment Samples (Modification of EPA 3550B Method).	12	8
5	API SBM Biodegradation Research Group. 1999. Sediment Respirometry Biodegradation Test of Synthetic Base Fluids Modification of OPPTS 835.3110, Respirometry Biodegradation Test. Draft Report. 12/99.	12	18
6	Still, I., S. Rabke and J. Candler. 1999. Development of a Standardised Reference Sediment to Improve the Usefulness of Marine Benthic Toxicity Testing as a Regulatory Tool. Presented at 9 th International Symposium on Toxicity Assessment, Pretoria, South Africa. 9/26/99 - 10/1/99.	12	15
7	Rabke, S.P and J.E. Candler. 1999. Maximizing the Discriminatory Power for Non-Aqueous Fluids using Modified <i>Leptocheirus plumulosus</i> Sediment Toxicity Test Method. Presented at SETAC, Philadelphia. 11/14-18/99.	12	8
8	Rabke, S.P., J. Candler, and C. Trial. 1998. Development of Acute Benthic Toxicity Testing for Monitoring Synthetic-Based Muds Discharged Offshore. IBC Conference on Minimizing the Environmental Effects of Offshore Drilling, Houston. 2/9/98.	12	26

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No.	Document Title	Volume	No. of Pages
9	EPA, "Fate, Transport and Transformation Test Guidelines OPPTS 835.3110 Ready Biodegradability," EPA 712-C-98-076. 1/98.	12	44
10	API SBM Biodegradation Research Group, "Solid-Phase Test System for the Biodegradation of Synthetic Base Fluids: Modification of the Biodegradation Test Developed by the Scottish Office of Agriculture Environment and Fisheries Department." Draft Report. 1/99.	12	14
11	International Organization for Standardization (ISO), "Water quality-Evaluation of the 'ultimate' anaerobic biodegradability of organic compounds in digested sludge-Method by measurement of the biogas production," ISO 11734, First edition. 12/15/95.	12	15
12	Candler, J., M. Churan, and L. Conn. 1996. Laboratory and Field Measurements of Vapors Generated by Organic Materials in Drilling Fluids. SPE 35866.	12	13
13	Hebert, R.T., Jr. Undated. An Evaluation of the Microtox Solid Phase Test for the Screening of Hydrophobic Materials. Prepared for M-I Drilling Fluids L.L.C.	12	12
14	Analytical data analysis by EPA: Attachments: 1. Printout of file EPADEG.XLS. 2. Printout of file Degresub.XLS. 3. Printout of file 4d-ocpd.XLS. 4. Printout of file 4DAY.XLS. 5. Printout of file 10D-ocpd.XLS. 6. Printout of file 10DAY.XLS.	12	40
15	Unknown. 1999. Degradation of Synthetic Base Fluids in a Solid-Phase Test System. 12/99.	12	11
16	Schaanning, Morten, Rainer Lichtenthaler, Brage Rygg. 1997. Biodegradation of Esters and Olefins in Drilling Muds Deposited on Arctic Soft-bottom Communities in a Low-temperature Mesocosm. Report SNO 3760-97. [This document submitted to OW Docket on 4/21/00.]	12	91
17	Fredriksson, Julie S. 2000. Modification to the Sediment Mixing Procedure in Battelle Synthetic-Based Drilling Fluids on Coastal and Marine Waters Statement of Work. Memorandum to K. Ditthavong, EPA. 4/19/00. Attachment A: Protocol for the Determination of Degradation of Synthetic Base Fluids in a Solid-Phase Test System [This document submitted to OW Docket on 4/21/00.]	12	5

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F. Environmental Assessment

(a) New Information

No.	Document Title	Volume	No. of Pages
1	EPA. 1998. Environmental Assessment of the Final Effluent Limitations Guidelines and Standards for the Pharmaceutical Manufacturing Industry. Office of Water. July 1998. EPA 821-B-98-008.	12	22
2	Alaska Department of Environmental Conservation. 1999. 18 AAC 70 Water Quality Standards, as amended through May 27, 1999.	12	58
3	Brandsma. 1999. Data sets shown in Figure 2 of Brandsma (1996) Computer Simulations of Oil-based Mud Cuttings Discharges in the North Sea. Submitted to L. Bowler, Pechan-Avanti via email. 8/26/99.	12	12
4	CSA. 2000. Revised Scope of Work for Gulf of Mexico Comprehensive Synthetic Based Muds Monitoring Program. Submitted to Seafloor Monitoring Workgroup. 1/6/00.	12	18
5	EPA. 1999. National Recommended Water Quality Criteria - Correction. Office of Water. April 1999. EPA 822-Z-99-001.	12	26
6	Höpner, T., H. Harder, K. Diesewetter, U. Dalyan, I. Kutsche-Schmietenknop and B. Teigelkamp. 1989. Biochemical Aspects of Hydrocarbon Biodegradation in Sediments and Soils. <i>Ecological Studies</i> , 73:251-271.	12	11
7	Bowler, L. 1999. Revised dilution calculations for the EA. Memorandum to N. Orentas. 9/9/99.	12	2
8	Battelle, Pacific Northwest Laboratories. 1984. Chemical Attenuation Rates, Coefficients, and Constants in Leachate Migration. Volume 1: A Critical Review, Section 10.	12	12
9	Johnston, C.A. 2000. Partition Coefficients. Memorandum to the File. 4/21/00. [This document submitted to OW Docket on 4/21/00.]	12	11
10	Schaanning, M. 2000. Simulated Seabed Studies. Email to J. Daly, EPA. 3/30/00.	12	3
11	Schaanning, M. 2000. Comments on behalf of the NIVA test. Email to C. Johnston, EPA. 3/31/00.	12	2
12	Schaanning, M. 2000. Research project on offshore chemicals - Reply. Email to C. Johnston, EPA. 4/3/00.	12	2
13	Gonzalez, R., U.S. Shell. 2000. Email to C. Johnston, Message on Shell's SPSS Funding for field studies. 2/15/00.	12	2

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(a) New Information

No.	Document Title	Volume	No. of Pages
14	Friedheim, J.E. 1997. Synthetic Fluids in Deepwater Drilling Applications. Presented at the 5 th International Conference of Minimizing the Environmental Effects of Drilling Operations, Aberdeen. 6/97.	12	15
15	Churan, M., J.E. Candler, M. Freeman. 1997. Onsite and Offsite Monitoring of Synthetic-Based Drilling Fluids for Oil Contamination. SPE 37906.	12	13
16	Rabke, S.P. and J.E. Candler. 1998. Reducing Potential Seafloor Impacts from Synthetic-Based Muds with Acute Benthic Toxicity Testing. Presented at the 5 th Annual International Petroleum Environmental Conference, Albuquerque, NM. 10/20-23/98.	12	28
17	Friedman, J.E. and A. Patel. 1999. Technical Solutions for Environmental Problems: Novel Drilling Formulations to Minimize Environmental Impact. SPE 52741.	12	12
18	Norman, M. 1997. Esters - The Only Synthetic Option for the Next Millennium? Presented at the 5 th International Conference of Minimizing the Environmental Effects of Drilling Operations, Aberdeen. 6/97.	12	13
19	Patel, A. 1998. Reversible Invert Emulsion Drilling Fluids - A Quantum Leap in Technology. IADC/SPE 4772.	12	11
20	Patel, A.D. 1998. Choosing the Right Synthetic-Based Drilling Fluids: Drilling Performance Versus Environmental Impact. SPE 39508.	12	14

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No.	Document Title	Volume	No. of Pages
1	Pechan-Avanti Group. 2000. Summary of Transport and Fate Documentation for Field Studies of Synthetic-Based Drilling Fluid Discharges. Prepared for U.S. EPA, Office of Science and Technology. 1/20/00.	12	15
2	Bowler, L.K., Pechan-Avanti Group. 2000. Pore Water Quality Analyses. Memorandum to N.S. Orentas. 2/24/00.	12	15
3	Bowler, L.K., Pechan-Avanti Group. 2000. Sediment Quality Guidelines Analyses. Memorandum to N.S. Orentas. 2/28/00.	12	5
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G. Economic Impact and Cost Effectiveness Analyses

No.	Document Title	Volume	No. of Pages
1	ERG. 2000. Summary of Data to be Used in Economic Modeling. Prepared for EPA. 3/00.	12	13
2	API. 1999. Petroleum Data Book. Petroleum Industry Statistics, Section VI, Tables 1 and 2. 1/99.	12	5
3	Jones, A., ERG. 2000. Personal communication with J. McIntyre, Pechan-Avanti concerning per-well costs. 2/1/00.	12	1
4	Jones, A., ERG. 2000. Personal communication with M. Parker, Exxon Mobil concerning geological and geophysical costs. 12/7/99.	12	1
5	Parker, M., ExxonMobil Production Company. 1999. Personal communication with R. Kirby, EPA concerning economics data. 12/20/99.	12	2
6	Parker, M., ExxonMobil Production Company. 2000. Personal communication with C. Johnston, EPA concerning economics data. 1/3/00.	12	2
7	Jones, A. 2000. Personal communication with M. Parker, ExxonMobil Production Company concerning pipeline costs. 2/2/00.	12	1
8	Regg, J. 1999. Deepwater Production and Discoveries. MMS. 8/4/99.	12	7
9	MMS. 2000. Segment List in Comes from Order. PDF file downloaded 2/3/00 from www.gomr/mms.gov/homepg/pubinfo/pfindex.html .	12	9

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10	<p>Zip disk containing MMS data:</p> <p>Lease Data. ASCII file downloaded 9/30/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/leasing/freelease.html. File: leasedeep.xls.</p> <p>Production for 1998. ASCII file downloaded 9/27/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/product/freeproduct.html. File: prod98.xls.</p> <p>Field Names Master List Appendix B. ASCII file downloaded 10/25/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/geologic/freegeol.html. File: appendb.xls.</p> <p>Field Names Master List Appendix C. ASCII file downloaded 10/25/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/leasing/freegeol.html. File: appendc.xls.</p> <p>Borehole. ASCII file downloaded 9/1/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/well/freewell.html. File: borehole.xls.</p> <p>Reserve History for Proved Fields by Field and Year. ASCII file downloaded 12/31/96 from www.gomr/mms.gov/homepg/pubinfo/freeascii/geologic/estimated1996.html. File: 96_his.xls.</p> <p>Platform Masters. ASCII file downloaded 12/15/99 from www.gomr/mms.gov/homepg/pubinfo/freeascii/platform/freeplat.html. File: platmast.xls.</p>	12	1 page + zip disk
11	Rose, M.B., T.W. Farndon and S.J. Fraser. 1998. Design and Rationale of the Final Rule on the Deep Water Royalty Relief Act. OTC 8710.	12	13
12	Parker, M., ExxonMobil. 1999. E-mail to R. Kirby, EPA transmitting industry's answers to EPA's economics questions. 12/17/99.	12	2
13	Parker, M., ExxonMobil. 2000. E-mail to Johnston, C.A. transmitting economic data to EPA. 1/4/00.	12	1

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H. Paperwork Reduction Act Requirements for BMP Plan

No.	Document Title	Volume	No. of Pages
1	EPA. 1993. Guidance Manual for Developing Best Management Practices (BMP). Office of Water. EPA 833-B-93-004. 10/93.	12	1
2	Johnston, C.A. 2000. Initial Burden and Cost Estimates for SBF BMP Information Collection Request. Memorandum to SBF Rulemaking Record. 2/28/00.	12	13
3	EPA. 1998. Information Collection Request Supporting Statement for Best Management Practices for the Bleached Papergrade Kraft and Soda Subcategory and the Papergrade Sulfite Subcategory of the Pulp, Paper, and Paperboard Point Source Category (40 CFR Part 430). 12/1/98.	12	19
4	Munro, R. Undated. Oil on Cuttings v Oil Discharges - the Relationship; analysis of self regulation.	12	4
5	Information Collection Request Supporting Statement For Best Management Practices Alternatives, Effluent Limitations Guidelines and Standards, Oil and Gas Extraction Point Source Category (40 CFR Part 435)	12	23

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1	Ballantine, Tom, Newpark Resources. E-mails to C. Johnston, EPA, in response to SBF NODA. 5/30/00 & 6/14/00.	13	2
2	Veil, John A., Argonne National Laboratory. Letter to C. Johnston, EPA, in response to SBF NODA. 6/9/00. Attachment: Comments on EPA's Methodology for Estimating Pore Water Concentrations, David Tomasko, ANL	13	6
3	Van Slyke, Don, Unocal. Unocal Comments; Effluent Limitations Guidelines for the Oil and Gas Extraction Point Source Category; Proposed Ruling (40 CFR 435). 6/9/00. Appendix A: Base Oil Stock Limitation Data Appendix B: Cuttings Retention Data Appendix C: Seabed Surveys Appendix D: Disposal Cost Data	13	395
4	Limia, Jose, Baker Hughes INTEQ. E-mail to C. Johnston, EPA, in response to SBF NODA. 6/16/00. Attachment 1: Limia, J., Baker Hughes INTEQ, A Solution to the Environmental Impact of the Discharges of Drilled Cuttings: Silica Micro-Encapsulation. Attachment 2: Limia, J.M., Baker Hughes INTEQ, Silica Micro-Encapsulation: A Technology for the Elimination of the Environmental Impact of Cutting Discharges, SPE 52747, 1999. Attachment 3: Quintero, L., J.M. Limia, S. Stocks-Fischer, Baker Hughes INTEQ, Silica Micro-Encapsulation Technology for Treatment of Oil and/or Hydrocarbon-Contaminated Drill Cuttings, SPE 59117, 2000. Attachment 4: Limia, J.M., Silica Micro-Encapsulation: A Technology for the Elimination of the Environmental Impact of Cutting Discharges.	13	55
5	Robichaux, Marcel P., Conoco Inc. E-mail to C. Johnston, EPA, in response to SBF NODA. 6/16/00.	13	2
6	Hurst, Jerri McGraw, JB Equipment, Re: 40 CFR Part 435 "Effluent Limitations Guidelines for the Oil & gas Extraction Point Source" Mud Recovery System for Synthetic Drilling Fluids. 6/16/00. Attachment 1: U.S. GOM M10 Performance Attachment 2: U.S. GOM M6 Performance Attachment 3: M10/6 History (Mud Recovery Units)	13	14

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7	Hall, John, Baroid Drilling Fluids, Re: Effluent Limitations Guidelines for the Oil and Gas Extraction Point Source Category; Proposed Rule 40 CFR Part 435 April 21, 2000. 6/19/00.	14	36
8	Satterlee, Kent, Offshore Operators Committee, Subject: Comments on Proposed Rule - Effluent Limitation Guidelines for the Oil and Gas Point Source Category 65 CFR 21548, April 21, 2000. 6/19/00.	14	2
9	Bullington, Alice, Phillips Alaska, Inc., Re: Comments on Synthetic-Based Drilling Fluids, Effluent Limitations Guidelines for the Oil and Gas Extraction Point Source Category, Proposed Rule, April 21, 2000, 6/19/00. Attachment: Letter from Randall F. Smith, EPA, to Sven A. Brandt-Erichsen, Heller Ehrman White & McAuliffe, Re: Cross Timbers Operating Co. et al., v. Environmental Protection Agency, Fifth Circuit No. 99-60203.	14	2
10	Marinello, Stephen A., Newpark Resources, Inc., Re: Effluent Limitations Guidelines for the Oil and Gas Extraction Point Source Category (Synthetic Base Fluids). 6/19/00. ** Confidential Business Information **	N/A	27
11	Jordan, Peter W., Subsurface Technology, Inc., RE: Comments on "Effluent Limitations Guidelines for the Oil and Gas Extraction Point Source Category; Proposed Rule" Federal Register Vol. 65, No. 78, April 21, 2000. 6/19/00. ** Confidential Business Information **	N/A	2
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21	<p>Candler, John, M-I L.L.C., Comments on EPA NODA. 6/20/00.</p>	18	33
22	<p>Moran, Robert, National Ocean Industries Association, Re: National Ocean Industries Association, American Petroleum Institute, Offshore Operators Committee, and Petroleum Equipment Suppliers Association Comments on "Effluent Limitations Guidelines for Oil and Gas Extraction Point Source Category," Proposed Rule 65 FR 21548 (April 21, 2000); Addendum 1. 6/23/00.</p>	18	14

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25	Hurst, Jerri McGraw, JB Equipment, E-mail to C. Johnston, EPA, with Corrected Excel Spreadsheets. 6/27/00. Attachment 1: U.S. GOM M6 Performance Attachment 2: M10/6 History (Mud Recovery Units)	18	6
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28	Shavelson, Bob, Cook Inlet Keeper, Re: Synthetic-Based Fluids Proposed Rule Comments; Addendum 1. 6/29/00. Includes: Wills, J., Muddied Waters, A Survey of Offshore Oilfield Drilling Wastes and Disposal Techniques to Reduce the Ecological Impact of Sea Dumping. May 2000.	18	148

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33	Martin, D., Centrifugal Services, Inc., Letter to C. Johnston, EPA. 8/2/00.	23	3
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37	Sullivan, F., Advising Environmental Scientist for Unocal, Email to C. Johnston, EPA. 11/7/00.	23	2
38	Johnston, C.A., EPA. Memorandum to File, EPA Meeting with Baroid on the Issue of Ester-SBFs Incentives. 11/22/00.	23	3

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1	<p>Johnston, C., EPA. Email to Stakeholders, Update on SBF Rulemaking. 8/29/00.</p> <p>Attachments: Meeting Summary Notes from July 20, 2000 SBF Stakeholders Meeting, Washington, DC.</p> <p>Attachment A: Attendance List.</p> <p>Attachment B - EPA Questions for SBF NODA Commentators</p> <p>Attachment C - Updated List of SBF NODA Commentators</p> <p>Attachment D - API/NOIA Synthetic Based Mud Research Consortium Handouts</p> <p>Attachment E - Industry Responses to EPA Questions</p>	23	54
2	<p>Johnston, C., EPA. Email to Stakeholders, Rev. 10/12/00 Briefing Package. 10/13/00.</p> <p>Attachment: Synthetic Based Drilling Fluids Effluent Limitations Guidelines in the Oil and Gas Extraction Point Source Category: Final Rule Options Selection Review, Presented to SBF Stakeholders, October 12, 2000.</p>	23	14
3	<p>U.S. EPA Synthetic-Based Drilling Fluid Project Analytical Methods Meeting, May 24-25, 2000. Agenda and Notes.</p>	23	5

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1	EPA. 2000. Presentation for Public Meeting on Notice of Data Availability SBF Effluent Limitations Guidelines, New Orleans, LA. 4/25/00.	23	10
2	Saupe, S., Cook Inlet RCAC. Email to C. Johnston, EPA, Comments at 4/25/00 SBF Public Meeting. 5/23/00.	23	3

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3	Johnston, C.A., EPA. 2000. Memorandum to the File, Telephone Conversation with Mr. Tom Prosser, Maurer Engineering. 11/22/00.	23	1

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4	<p>Johnston, 2000 - Attendee Information from the DOE/MMS Deepwater Dual-Density Drilling Workshop, Houston, TX. 9/28/00.</p> <p>Attachments: Attendance List and Agenda</p> <p>Prosser, T., Maurer Engineering. "Minimizing Wear in Deepwater Risers, Flex Joints, and BOPs"</p> <p>Sjoberg, G., Baker Hughes. "DeepVision pumps Presentation."</p> <p>Smith, K. and C. Weddle. "SubSea MudLift Drilling Joint Industry Project."</p> <p>Gonzalez, R., Shell E&P. "Subsea Pumping, a Dual Gradient Approach to Deepwater Drilling."</p> <p>Goldsmith, R., Goldsmith Engineering, Inc. "Dual Gradient Drilling, Opportunities and Challenges."</p> <p>Medley, G.H., J.E. Haston, R.L. Montgomery, I.D. Martindale, and J.R. Duda. 1997. Field Application of Light Weight Hollow Glass Sphere Drilling Fluid. SPE 38637.</p> <p>Medley, G.H., W.C. Maurer and A.Y. Garkasi. 1995. Use of Hollow Gas Spheres for Underbalanced Drilling Fluids. SPE 30500.</p> <p>Maurer, W.C., Maurer Engineering. "Potential Applications for Hollow Microspheres."</p> <p>Juvkam-Wold, H.C. and J.J. Schubert, Texas A&M. "What a Dual Gradient Drilling System Must be Able to do for Effective Well Control."</p> <p>Smith, K.L., C.E. Weddle, III, C.P. Peterman and R.E. Snyder. 2000. Dual Gradient Drilling Nearly Ready for Field Test. World Oil, October 2000. Pp. 61-67.</p> <p>3M Performance Materials Division, Specialty Additives. "Glass Bubbles Overview, Oil Industry."</p> <p>Strategic Center for Natural Gas. Program Facts. USDOE, National Energy Technology Laboratory.</p> <p>Bourgoyne, A.T., Jr., Petroleum Services International. "Deepwater Well Design, An Overview of Dual-Density Drilling."</p>	23	113
5	<p>Furlow, W. and M. Deluca, Offshore. 2000. Riser Management Taking Center Stage as Drilling Moves into Greater Depths. Offshore, January 2000. Pp 32-33.</p>	23	2

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12	Engineering News Record. Construction Cost Index History (1908 - 2000). www.enr.com/cost/costcci.asp. 8/14/00.	23	2
13	Candler, J., M-I Drilling Fluids. Email to C.A. Johnston RE: Unit Costs for Various Muds. 10/23/00.	23	5
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16	Cranswick, D. and J. Regg, MMS. 1997. Deepwater in the Gulf of Mexico: America's New Frontier. February 1997, New Orleans. OCS Report MMS 97-0004.	23	47
17	SAIC. 1994. SIC Code Profile 13 Oil and Gas Extraction, Draft. Prepared for EPA Office of Pollution Prevention and Toxics. 9/30/94.	23	79
18	Johnston, C.A., EPA. 2000. Memorandum to the File, EPA Meeting with Unocal Representative. 7/26/00. Attachment: Unocal Presentation	23	38
19	Hause, W., MMS. MMS Issues and Concerns with Dual Density Drilling. Presented at Deepwater Dual Density Drilling Workshop, Houston, TX. 9/28/00.	24	10
20	Johnston, C.A., EPA. 2000. Memorandum to the File, EPA Photograph of Auger Drill Cuttings Transport System. 12/1/00.	24	1

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32	Searls, J.P., USGS. U.S. Geological Survey, Mineral Commodity Summary for Barite, February 2000.	24	2
33	National Petroleum Council. 1999. Natural Gas Meeting the Challenges of the Nation's Growing Natural Gas Demand. Volume 1: Summary Report Volume 2: Task Group Reports Volume 3: Appendices	25	626
34	Energy Information Administration. 1999. Annual Energy Outlook 2000, with Projections to 2020. DOE/EIA-0383(2000).	25	261
35	Cimato, J., MMS. Email reply to C. Johnston, EPA RE: Additional MMS Support for EPA SBF Rulemaking - Coral Reefs and Hypoxia. 5/24/00.	26	4

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8	Scott, P., Marathon Oil. New Data Sidetrach Shell Auger A-18. Email to J. McIntyre, Pechan. 7/17/00. Attachment: Sh-a-a18.xls	26	17

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11	<p>Scott, P., Marathon Oil. CHA_6.wk4 - COR Data Chevron Genesis A-6. Email to J. McIntyre, Pechan. 7/17/00.</p> <p>Attachment: Ch Genesis A-6 SBM COR Corrected.xls</p>	26	11
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34	Angelle, R. and P. Scott. 2000. Rig Survey Update Focusing on the Number of Rigs/Platforms Where Cuttings Dryers Could Not be Installed. Prepared by the Technology Assessment Workgroup of Synthetic Based Mud Research Consortium (API and NOIA) in Conjunction with Cuttings Dryer Equipment Vendor Representatives. 11/9/00.	27	10
35	Rafferty, M. et al. 2000. Best Management Practices Regarding Discharges Associated with Synthetic-Based Drilling Fluids at the Noble Drilling Rig Jim Thompson. (Draft). Prepared by Jim Thompson Rig Crew, Shell E&P Co., Noble Drilling and M-I Drilling Fluids. 7/17/00.	27	74
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37	Scott, P., Marathon Fluids. 2000. Letter to J. McIntyre, Pechan Transmitting a Copy of Fax from R. Morris, Unocal/Spirit Energy 76 to C. Johnston, EPA of Flow Chart for SEParker.wk4 well. 7/18/00.	27	7
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41	Angelle, R., Transfer Systems International, Inc. 2000. Letter to C. Johnston, EPA Transmitting Information Explaining Cuttings Containment and Handling Equipment. 7/28/00.	27	41
42	Sable Offshore Energy Incorporated. 2000. Offshore Environmental Effects Monitoring Program 1999 Annual Report, Volume 1: Report. Venture, Thebaud & North Triumph. Project No. 12989. March 2000.	27	244
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56	Eaton, B.A. 1969. Fracture Gradient Prediction and its Application in Oil Field Operations.	28	9
57	Fertl, W.H. 1976. Abnormal Formation Pressures: Implications to Exploration, Drilling, and Production of Oil and Gas Resources.	28	9
58	Candler, J., M-I Drilling Fluids. Email to C. Johnston, EPA, Drilling Performance. Attachment: Synthetic Blend ECD Comparison.ppt	28	5
59	Smith, K.A., Conoco. Presentation to EPA, SubSea MudLift Drilling Joint Industry Project. 7/14/00. ** Confidential Business Information **	NA	16
60	Hall, J., Baroid. Low Viscosity Ester Fluids Technical Review. Report to EAP. 4/11/00. ** Confidential Business Information **	NA	7
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64	M-I Drilling Fluids. 1997. Performance Report, Gulf of Mexico - NovaPlus System Sets Deepwater Record.	28	3
65	M-I Drilling Fluids. 1995. Performance Report for Green Canyon Area, Gulf of Mexico.	28	2
66	Candler, J., M-I Drilling Fluids. Email to C. Johnston, EPA, RE: Drilling Performance. 12/21/00.	28	2
67	M-I. Update on SBM Work Groups. PowerPoint Presentation.	28	16

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68	Candler, J., M-I Drilling Fluids. Email to C. Johnston, EPA, RE: Internal Olefin Questions. 11/16/00. Attachment: SBMdefinition.doc	28	4
69	Satterlee, K., Shell. Email to C. Johnston, EPA, SBM Rulemaking - Subsea Pumping. 8/17/00.	28	2
70	Satterlee, K., Shell. Email to C. Johnston, EPA, SBM Guidelines - Subsea Pumping. 8/15/00.	28	2
71	Gonzalez, R., Shell. Email to C. Johnston, EPA, Subsea Pump System. 8/30/00. Attachment: Smith, K.L., A.D. Gault, D.E. Witt, F.P. Botros, C. Peterman, M. Tangedahl, C.E. Weddle, H.C. Juvkam-Wold and J.J. Schubert. 1999. Subsea MudLift Drilling JIP: Achieving Dual-Gradient Technology. <i>Deepwater Technology</i> . Aug. 1999. pgs. 21-28.	28	8
72	Moran, R.J., NOIA. Email to C.A. Johnston, EPA, EPA Action Items. 7/12/00.	28	5
73	Boatman, M.C., MMS. Email to J.P. Ray, Equilon, Issue with Sites Visited During Scouting Cruise. 7/18/00.	28	3
74	Smith, K., Conoco. Email to C. Johnston, EPA, Minutes from EPA meeting. 7/18/00.	28	2
75	Scott, P., Marathon Fluids. Email to J. McIntyre, Pechan, New Data Sidetrack Shell Auger A-18. 7/16/00. Attachment: Sh-a-a18.xls	28	6
76	Scott, P., Marathon Fluids. Email to J. McIntyre, Pechan, Two New Data Sets from Chevron. Attachments: CuttingsRetention.xls UnhiddenSheet.xls Int4&5 Retention.xls	28	22
77	McNeil, R., Bellaire Technology Co. Email to C. Johnston, EPA, Response to Questions on Esters. 8/1/00. Attachment: Response to EPA Questions of July 20.doc	28	6
78	McNeil, R., Bellaire Technology Co. Email to C. Johnston, EPA, Re: Response to Questions on Esters. 8/2/00.	28	3
79	Curran, M., Swaco. Email to C. Johnston, EPA, Mud 10 Info. 8/9/00.	28	1

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80	Hurst, B., JB Equipment Inc. Letter to C.A. Johnston, EPA, Response to API's Report to the EPA "Evaluation of Accuracy of JB Equipment Retention on Cuttings Data." 8/10/00.	28	4
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82	Bullington, A., Phillips Petroleum. Email to C. Johnston, EPA, Re: SBF - EPA Request for Information. 8/9/00.	28	2
83	Scott, P., Marathon Oil. Email to C. Johnston, EPA, Schematics Canadian ROC. 8/7/00.	28	4
84	Bernier, R.F., Texaco. Email to K. Dithavong, EPA, Oil and Gas Journal article. 10/11/00.	28	2
85	Ray, J.P., Equilon. Email to K. Zirbser, EPA, RE: Issues with Sites Visited During the Scouting Cruise. 7/31/00.	28	4
86	Hall, J., Baroid/Haliburton. Email to C. Johnston, EPA, Replies to Questions. 7/31/00. Attachment 1: Elastomer Summary: Testing for Baroid Attachment 2: Text Provided by Sam-Arne Nøland, Marine Biologist, Det Norske Veritas, Norway Attachment 3: EPA Questions Directed Towards Baroid at Meeting in Washington July 20, 2000 Stakeholder's Meeting	28	11
87	Hall, J., Baroid. Email to C. Johnston, EPA, Petrofree Well Information. 8/17/00. Attachment: Petrofree Brunei Press Release.doc	28	4

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88	<p>Van Slyke, D., Unocal. Email to C. Johnston, EPA, RE: Unocal Cuttings Retention Data. 7/27/00.</p> <p>Attachments: Verm38-39 ST9 1.xls SBMC-23.xls (see B(b)22) Retention_on_Cuttings-Boudin.xls (see B(b)22) VERM38-39 ST2.xls (see B(b)22) Vermilion 38-39#5-tracking.xls (see B(b)22) parker22Verm67-76_5.xls (see B(b)22) pride1501A-8.xls (see B(b)22) A18 ST4 Cuttings.xls (see B(b)22) Unocal-H-9-epa.xls (see B(b)22) EPA-Testing H-10 12.25 hole.xls (see B(b)22) Unocal-H-11-epa.xls (see B(b)22) Unocal-H12-6in.xls (see B(b)22)</p>	28	9
89	<p>Scott, P., Marathon Fluids. Email to C. Johnston, EPA, Re: RE: Unocal Cuttings Retention Data. 7/29/00.</p> <p>Attachments: Verm38-39 ST9 1.xls (see B(b)88) A18 ST4 Cuttings.xls (see B(b)22)</p>	28	4
90	<p>Angelle, R. Email to C. Johnston, EPA, Cuttings Handling. 7/20/00.</p>	28	1
91	<p>Candler, J., M-I Drilling Fluids. Email to C. Johnston, EPA, FW: Rig Survey Update Cuttings Dryer Installation - SBF ROC limits. 11/13/00.</p> <p>Attachment: Angelle, R. and P. Scott. 2000. Rig Survey Update Focusing on the Number of Rigs/Platforms Where Cuttings Dryers Could Not be Installed. Prepared by the Technology Assessment Workgroup of Synthetic Based Mud Research Consortium (API and NOIA) in Conjunction with Cuttings Dryer Equipment Vendor Representatives. 11/9/00.</p>	28	12

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(a) Statistical analysis of retention on cuttings

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1	Johnston, C.A., EPA. Memorandum to C. White, EPA. Initial Analyses to be Performed on Cuttings Retention Data. 8/4/00	28	14
2	Avanti Corporation. 2000. Memorandum to B. Vanatta, ERG, Engineering Review of SBF Retention-on-Cuttings Data. 12/12/00.	28	112

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(b) Engineering models and compliance cost analyses

		Vol.	Pages
1	Johnston, C.A., EPA. 2000. Memorandum P. Scott, Marathon Oil Co. EPA Compliance Cost Methodology for BAT/NSPS Cuttings Dryer Technology. 5/15/00.	28	30
2	JB Equipment Inc. Emails to C. Johnston, EPA, Screen Scroll Centrifuges. 12/20/00.	28	3
3	Avanti Corporation. Memorandum to B. Vanatta, ERG. Analysis of Loadings (Removals) and Costs (Savings) Associated with WBF Wells Projected to Fail Their Sheen and Toxicity Limitations. 12/26/00.	28	39
4	Avanti Corporation. Email to A. Jones, ERG, Unocal Costs and Wells per Structure. 12/15/00. Attachments: unocal_costperwell.xls unocal_Table 1_wellsperig.xls	28	7

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1	Orentas, N. 2000. Memorandum to K. Mahsman, ERG. Revised Supply Boat Trips under the Synthetic Based Fluid (SBF) Zero Discharge Option.	29	10
2	Johnston, C.A., EPA. Memorandum to File, On-Shore Formation Injection Disposal Non-Water Quality Environmental Impact Input Parameters. 6/20/00.	29	6
3	Johnston, C.A., EPA. Memorandum to the File, Update on Several Model Input Parameters for Offshore Injection and Land Disposal (Injection and Landfarming) Operations for Zero Discharged SBF Wastes. 8/14/00.	29	8
4	Silva, R., DOE. Email to C. Johnston, EPA. Updated Tanker and Pipeline Comments. 9/5/00.	29	2
5	EPA, Region VIII. 1999. Fact Sheet: Problem Oil Pits.	29	3
6	Scott, P, Marathon Fluids. Email to C. Johnston, EPA, Re: EPA Questions and Support Data. 9/8/00. Attachment 1: EPA questionstrack TKT.doc Attachment 2: IADCstats.xls Attachment 3: IADCtable10.xls Attachment 4: Lifts, Trips and Miles for Zero Discharge.xls	29	6
7	MMS. 1999. Incidents Associated with Oil and Gas Operations, Outer Continental Shelf 1997. OCS Report MMS 99-0047.	29	122
8	MMS and Offshore Technology Research Center. 2000. Proceedings of a Workshop, Workshop on Crane Safety, Lafayette, Louisiana, 28 March 2000.	29	204
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11	Yow, P., OSHA. 2000. Crane Accidents 1997-1999: A Report of the Crane Unit of the Division of Occupational Safety and Health. 5/23/00.	29	4
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1	Battelle. 2000. Analysis Methods for Evaluation of Environmental Effects of Synthetic-Based Drilling Fluids on Coastal and Marine Waters. Prepared for USEPA, Ocean and Coastal Protection Division. 7/12/00.	30	358
2	Battelle. 2000. Raw Data, Chemistry for Fluid EPA-4, Linear Alpha Olefin for Evaluation of Environmental Effects of Synthetic-Based Drilling Fluids on Coastal and Marine Waters. Prepared for USEPA, Ocean and Coastal Protection Division. 7/12/00.	30	263
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11	Battelle. 2000. Raw Data, Chemistry for Fluid EPA-8, Olive Oil for Evaluation of Environmental Effects of Synthetic-Based Drilling Fluids on Coastal and Marine Waters. Prepared for USEPA, Ocean and Coastal Protection Division. 7/12/00.	35	599
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17	Johnston, C.A., EPA. 2000. Memorandum to File, API Retort Minimum Detection Level Study Teleconference. 7/26/00.	37	1
18	Roberts, D. and D. Herman. Undated. Report to the API Synthetic Base Fluid Solid Phase Biodegradation Work Group.	37	8
19	Montgomery, R., Avanti. Memorandum to B. Vanatta, ERG, Report on Trip to Environmental Enterprises, Slidell, LA, 7/26-28/00.	37	2
20	Bernier, R.F., Texaco. Email to C. Johnston, EPA Transmitting ASTM D2974-87, "Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils," July 1987. 12/21/00.	37	6
21	Candler, J., M-I Drilling Fluids. Email to C. Johnston, EPA, Transmission of Olefin MW vs. Toxicity (toxtrend.xls). 11/16/00.	37	3
22	ASTM 10-day sed tox tests	37	26
23	Carpenter, J.F., Amoco. Email to Analytical Work Group, RE: Conference Call/ November 13 Meeting at the Chevron/DTC Synthetic Based Mud Analytical Work Group. 1/5/98.	37	3

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24	EPA. Methods for Assessing the Toxicity of Sediment-Associated Contaminant with Estuarine and Marine Amphipods. EPA-600-R-94-1025. June 1994.	37	154
25	EPA. Methods for the Determination of Diesel, Mineral, and Crude Oils in Offshore Oil and Gas Industry Discharges. EPA-821-R-92-008. December 1992.	37	83
26	ISO 11734. 1995	37	16
27	Results of Determination of Method Detection Limits for Two Base Fluids Using API Recommended Practice 13B-2	38	15
28	Rabke and Candler. Interlaboratory Comparison of a 96-Hour <i>Mysidopsis bahia</i> Bioassay Using a Water Insoluble Synthetic-Based Drilling Fluid.	38	3
29	Monitoring Synthetic-Based Fluids for Oil Contamination. JPT, November 1997.	38	4
30	Sides, J. and K. Spilker. Proposed Method for Detecting Oil Contamination in SBM, A Blacklight C ₁₈ SEP PAK® Cartridge Method.	38	13
31	Analytical Services Laboratory. Work Order for GC/MS Analysis for Percent Contamination.	38	9
32	Candler, J., M-I Drilling Fluids. Email to J. Daly, EPA, 0.1 to 1.0 Range and PAH of Crudes -Reply. 1/6/98.	38	2
33	Annis, M. 1998. Procedures for Sampling and Testing Cuttings Discharged While Drilling with Synthetic-Based Muds (Beta Test Version). 10/13/98.	38	17
34	Moran, R., NOIA. Letter to J. Daly, EPA Transmitting Document: Survey of Monitoring Approaches for the Detection of Oil Contamination in Synthetic-based Drilling Muds (SBMs). 10/21/98.	38	51
35	Scott, P., Marathon Oil. Email to K. Ditthavong, EPA, Correction to MDL Retort Testing Data from M-I Shell Ursa. 7/12/00. Attachment: MI Shell Rig MDL.xls	38	4
36	Moffat, C.F., P.D. Munro and R.M. Stagg. 1998. Development of a Solid-Phase Test for the Comparison of the Biodegradation Rates of Synthetic Mud Base Fluids. Fisheries Research Services, Marine Laboratory Aberdeen.	38	20

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37	<p>Scott, P., Marathon. Email to K. Ditthavong, EPA, MDL Testing. 7/3/00.</p> <p>Attachments: RigMDLSamples.doc NewSpike2.doc ESTERSPIKE.XLS NewSpk.wpd RigMDLSamp.wpd ESTERSPIKE.wk4</p>	38	6
38	<p>Scott, P., Marathon. Email to K. Ditthavong, EPA, Sample Preparation for EPA Retort MDL Testing. 7/6/00.</p> <p>Attachments: EPAMDLSamp.wpd EPAMDLSamples.doc</p>	38	3
39	<p>Bernier, R.F., Texaco. Email to K. Ditthavong, EPA, FW: Biological Testing. 7/26/00.</p> <p>Attachment: Second Biodeg Comments to NODA July 00.doc</p>	38	3
40	<p>Candler, J., M-I Drilling Fluids. Email to K. Ditthavong, EPA, FW Modification of Federal Register. 12/6/00.</p> <p>Attachment: Modification to Federal Register Vol.doc</p>	38	2
41	<p>Candler, J., M-I Drilling Fluids. Email to K. Ditthavong, EPA, FW: RPE Test Report. 12/7/00.</p> <p>Attachment: 1207-058.doc</p>	38	2
42	<p>Candler, J., M-I Drilling Fluids. Email to K. Ditthavong, EPA, Appendix 6 Revised. 1/3/80.</p> <p>Attachments: att1.htm Appendix 6 to Subpart A of Part 435revised.doc</p>	38	16
43	<p>Rabke, S., M-I Drilling Fluids. Email to K. Ditthavong, EPA, Whole mud Calculations. 11/16/00.</p> <p>Attachment: wholemud Calc.doc</p>	38	2
44	<p>Claff, R., API. Memorandum to Synthetic Based Muds Analytical Workgroup, April 20 Conference Call on ELG Comments. 4/19/99.</p>	38	16

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45	Scott, P., Marathon. Email to K. Dittavong, EPA, Rig Based MDL Testing. 7/3/00. Attachments: ReportForm.xls Instructions.doc	38	11
46	ASTM. Standard Guide for Determination of the Bioaccumulation of Sediment-Associated Contaminants by Benthic Invertebrates. Designation: E 1688 - 97a. 3/10/97.	58	50
47	Tomy, G.T., A.T. Fisk, J.B. Westmore and D.C.G. Muir. 1998. Environmental Chemistry and Toxicology of Polychlorinated <i>n</i> -Alkanes. Rev Environ. Contam. Toxicol. 158:53-128.	38	76
48	Chandler, J., M-I Drilling Fluids. Synthetic-Based Muds Research Consortium. Proposed Method for Determination of Crude Oil Contamination in Synthetic Based Muds by GC/MS. November 1997.	38	22
49	Chandler, J., M-I Drilling Fluids. Synthetic-Based Muds Research Consortium. Proposed Method for Determination of Crude Oil Contamination in Synthetic Based Muds by GC/FID. November 1997.	38	16
50	Chandler, J., M-I Drilling Fluids. Crude Oil Contaminant Data Submitted to EPA. June 1998.	38	6

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1	Neff, J.M., S. McKelvie and R.C. Ayers. 2000. A Literature Review of Environmental Impacts of Synthetic Based Drilling Fluids, Draft. Report to USDO, MMS. 4/27/00.	38	101
2	Cobby, G., Western Australian Dept. of Minerals and Energy. Email to C. Johnston, EPA. 9/12/00. Attachment: Cobby, G.L. and R.J. Craddock, Western Australian Dept. of Minerals and Energy. 1999. Western Australian Government Decision-Making Criteria Involved in the Regulation of Drilling Fluids Offshore. APPEA Journal 1999.	38	9
3	Versar. 2000. Toxic and Pollutant Weighting Factors for Final Effluent Guidelines for the Oil and Gas Extraction (Synthetic-Based Drilling Fluids) Industry. Final Report, 11/14/00.	38	26
4	Johnston, C.A., EPA. 2000. Memorandum to File, Telephone Conversation with Jim Ray, Equilon Enterprises, on Recent Results of Joint Industry/MMS GOM SBF Seabed Survey. 9/15/00.	38	1
5	Moran, R.J., NOIA. Email to C. Johnston, EPA, An Evaluation of the Bioaccumulative Potential of Synthetic. 8/2/00. Attachment: An Evaluation of the Bioaccumulative Potential of Synthetic Drilling Fluids.	38	4
6	Jensen, T, R. Palerud, F Olsgard, S.M. Bakke et al. 1999. Technical Report, Ministry of Oil and Energy, Dispersion and Effects of Synthetic Drilling Fluids on the Environment; Biological Survey, Long-Term Effect of Oil and Produced Water, Chemicals and Oil Spill Contingency. Report No. 99-3507.	39	70
7	Tudor, L., H. Jacobs, and P. Harrigan, EPA. 2000. Memorandum to EAD, SASD, and HECD, Fish Consumption Rates to Use in Environmental Assessments/Benefits Analyses. 5/10/00.	39	6
8	Cimato, J., MMS. Email to C. Johnston, EPA, MMS Regulatory Measures to Protect the Marine Environment. 9/1/00.	39	7
9	Smith, J.P., R.C. Ayers, and R.D. Tait. Undated. Perspectives from Research on the Environmental Effects of Offshore Discharges of Drilling Fluids and Cuttings.	39	23
10	Jacques Whitford Environmental Limited. 1999. Hibernia Production Phase Environmental Effects Monitoring Program - Year One, Volumes I & II. Prepared for Hibernia Management Development Corporation. JWEL Project No. 1176-1529. 6/18/99.	39	366

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11	<p>Ditthavong, K., EPA. 2000. Email to R. Montgomery, Avanti Corp., Biodeg and Sed Tox Data.</p> <p>Attached files: Revised EPA Sum Client.xls Grainsiz.xls 10d-ocpd.xls 4d-ocpd-.xls Phaseiis.xls Phaseiiw.xls Carol Phase 1 Results.xls</p>	39	74
12	<p>Ensele, R., MMS. Email to C. Johnston, EPA, SBF Mud Releases. 6/30/00.</p>	40	2
13	<p>Petrazzuolo, L., Pechan-Avanti. Communication with S. Brough, EPA Region 10, Alaska State Water Quality Standards. 4/3/00.</p>	40	3
14	<p>Orentas, N., Avanti Corporation. Memorandum to C. Tamulonis, EPA, Preliminary Analysis of Benthic Faunal Sample Data Collected During the EPA/Industry SBF Screening Cruise, August 1997. 12/17/00.</p>	40	2
15	<p>Carls, M.G., S.D. Rice and J.E. Hose. 1999. Sensitivity of Fish Embryos to Weathered Crude Oil: Part I. Low-level Exposure During Incubation Causes Malformations, Genetic Damage, and Mortality in Larval Pacific Herring (<i>Clupea pallasii</i>). Environ. Tox. and Chem. Vol. 18, No. 3:481-493.</p>	40	11
16	<p>Heintz, R.A., J.W. Short and S.D. Rice. 1999. Sensitivity of Fish Embryos to Weathered Crude Oil: Part II. Increased Mortality of Pink Salmon (<i>Oncorhynchus gorbuscha</i>) Embryos Incubating Downstream from Weathered <i>Exxon Valdez</i> Crude Oil. Environ. Tox. and Chem. Vol. 18, No. 3:494-503.</p>	40	10
17	<p>Montgomery, R., Avanti Corporation. Discriminatory Power Analysis for SBF/Diesel.</p>	40	4
18	<p>NMFS. 1999. Fisheries of the United States, 1998. Current Fishery Statistics No. 9800. July 1999.</p>	40	4
19	<p>Bolton, J., DynCorp. Memorandum to K. Ditthavong, EPA, Data Review Narrative for Benthic Infaunal Identification Data for the Synthetic Based Drilling Fluids Study, Episode 5098. 8/23/00.</p>	40	15

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2	Johnston, C., EPA. Email to J. Covington, EPA and A. Jones, ERG, Notes on DOE's Economic Analysis. 9/6/00.	40	2
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G.	Economic Impact and Cost Effectiveness Analyses	Vol.	Pages
16	Radler, Marilyn and Laura Bell. Special Report: Operating, Financial Results for OGJ 200. Oil & Gas Journal. Volume 98(42). October 16, 2000.	40	20
17	US EPA. Deepwater Production Loss Model : BAT & NSPS. 2000. Disk.	40	1 Disk
18	US EPA. Sensitivity Analysis of Higher Oil & Gas Prices: BAT & NSPS Platforms. 2000.	40	9
19	US EPA. Environmental Justice Index Methodology. Region 6 Compliance Assurance and Enforcement Division, Dallas, TX. 1994.	40	16

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H.	OMB Review and Technical Support Documents	Vol.	Pages
1	Effluent Limitations Guidelines and New Source Performance Standards for the Oil and Gas Extraction Point Source Category. Draft submitted for OMB review.	40	260
2	EPA. 1996. Response to Public Comments on Effluent Limitations Guidelines and Standards for the Coastal Subcategory of the Oil and Gas Extraction Point Source Category.	41	733
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